the OIL AND GAS JOURNAL

ANUARY 27
1938

ANNUAL
REVIEW
NUMBER

PRICE
CENTS

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The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

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SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents. Price of any back copy more than 1 year old is 50 cents.

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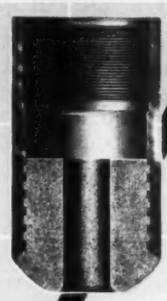
Annual Review

AND FORECAST OF THE BAKER LINE OF OIL TOOLS

1907 1910 1913 1916 1919 1921 1924 1927 1930 1933 1938

NEW PEAKS IN SAFETY AND EFFICIENCY

BAKER CEMENT GUIDE CASING SHOE. (Right) There has been no "recession" in the demand for this strong, safe Guide Shoe with internal construction of *drillable* Baker Formula Concrete. Outlook continues favorable with widespread preference for this shoe predicted for the ensuing 12 months.



BAKER CEMENT WHIRLER FLOAT SHOE. (Above) Demand for this Shoe continues sharply upward. This upward trend is attributed to the fact that this shoe affords the ultimate in cementing efficiency. Baffled side ports direct the slurry in a whirling motion up and around the casing, affording a better cement job with little danger of channelling.

BAKER CEMENT RETAINER. (Right). Has been in heavy demand all year for Squeeze Jobs; Recementing; Reducing Gas/Oil Ratios; Shutting off bottom water; Cementing behind sections of pipe; Plugging back to upper zones; Testing upper cased formations. This item in the Baker line has paid operators substantial dividends during 1937 and indications point to possibilities of even greater profit returns to the industry during 1938.

BAKER WALL SCRAPER. (Right) A consistent favorite among operators desiring a safe, dependable tool for enlarging the walls of an open hole to a greater diameter. The manufacturers of this tool report that its Safety and Amazing Expansion will continue to constitute the high lights of its performance during 1938.

BAKER CEMENT FLOAT SHOE. (Below) Market continues strong on this item, with consistent demand indicated in 1938 due to the STRENGTH, VALVE EFFICIENCY and DRILLABILITY afforded by this Baker Cement Guiding, Floating, Cementing unit.

BAKER CEMENT FLOAT COLLAR. (Above) A "logical buy" for use in conjunction with the Baker Cement Guide Shoe. It meets the demand of operators who prefer to stop the cementing plug one or two joints above the shoe, thus retaining the cement tailings in the casing. Has same strong, safe construction as Baker Cement Float Shoe.

BAKER CEMENT WASH-DOWN WHIRLER GUIDE SHOE. While a newcomer in the market, reports indicate this Shoe has found immediate acceptance. It is designed to facilitate the landing of casing where bridges or other obstructions are likely to occur. This type of shoe is also furnished with a back pressure valve—designated as Baker Cement Wash-Down Whirler Float Shoe.

BAKER CABLE TOOL CORE BARREL. (Extreme left) Cable tool operators report there has been no "decline" during the past year in the ability of this tool to take uncontaminated cores from all types of formations. It has established "new lows" in operating costs and reached "new peaks" of popularity with drillers.

SUMMARY AND FORECAST

Trade indications point to a greater demand for these Baker Tools with their established peaks of Safety and Efficiency being consistently maintained during the coming year.

Investment in these tools should return operators a substantial dividend during 1938 with no speculative risk.

It is recommended that oil men desirous of improving the outcome of their operations during 1938 should investigate the tools illustrated above, which are fully described in the Baker Section of the 1938 Composite Catalog.

BAKER OIL TOOLS, INC.

Telephone Jefferson 8211 – HUNTINGTON PARK, CALIFORNIA – 2959 E. Slauson Ave.
Telephone WAyside 2108 – HOUSTON PLANT AND OFFICE – 6023 Navigation Blvd.

MID-CONTINENT OFFICE AND WAREHOUSE:
Telephone 2-8003 – Tulsa, Oklahoma – 312 East Fourth Street

WEST TEXAS BRANCH OFFICE
Odessa, Texas – Telephone 317

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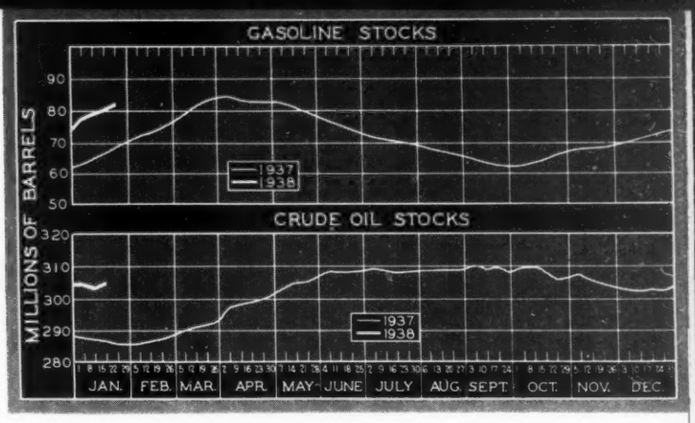


Texas Cuts 200,000 Bbls. Daily

THE action of the Texas Railroad Commission in making effective a Sunday shutdown program starting January 23 and extending over the next six weeks overshadowed in importance every other development in the oil business over the past week. It represents bold effort on the part of Lone Star state to do more than its share in ending an over-production situation which is national in scope. If carried out and supported by other states it will go a long way in taking the industry through the period of lowest seasonal demand for gasoline and should bring an improved statistical situation in both the crude oil and refining divisions.

CRUDE PRODUCTION 3,508,103 barrels Daily average—up 29,217 barrels.

CRUDE STOCKS 303,679,000 barrels as of January 15—up 601,000 barrels.

GASOLINE STOCKS 82,785,000 barrels as on January 22—up 1,838,000 barrels.

REFINERY RUNS 3,220,000 barrels daily week ending January 22—down 20,000.

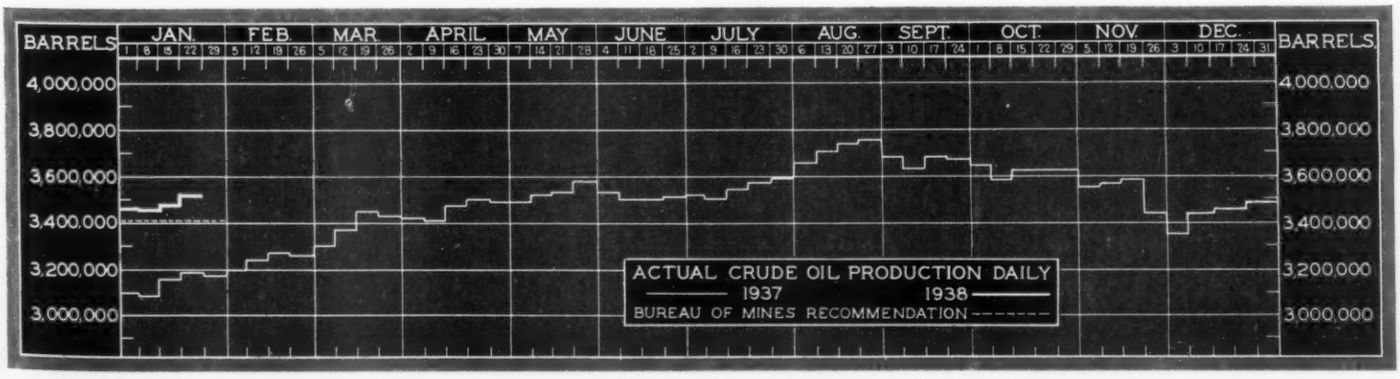
The Texas order provides for a one-seventh reduction in the weekly production. This is to be accomplished either by a complete shutdown of a field for one day or an equivalent curtailment extending through the week. The nature of the order issued by the railroad commission which extends to the crude purchasers and developments so far in carrying out the plan indicate that it will be enforced 100 per cent. To date no important opposition has developed from operators who in most cases are willingly supporting the plan in the hope that it will aid the industry over the present emergency and place it on a sound operating basis for the remainder of the year.

The Texas program should result in a reduction of about 200,000 barrels daily in that state starting this week. Reductions in production are in prospect in the five other principal oil producing states—California, Oklahoma, Louisiana, Kansas and New Mexico—during February either through action of the state conservation bodies or through curtailments made effective by some of the large crude buyers. The buyers in increasing number at scattered points in the Mid-Continent area are reducing crude purchases in line with decreased refinery requirements regardless of state allowables. It has been suggested that production in these five states in February be kept 5 per cent under the Bureau of Mines recommendation and two states have indicated that they will do so. If all five states carry out this plan there will be a reduction of approximately 100,000 barrels daily in addition to the 200,000-barrel cut in Texas. Developments in refinery markets have not been favorable except for the 1 cent advance in Pennsylvania grade bright stocks. This ends a long period of declining prices in this and other Pennsylvania lubricants. Natural gasoline prices have declined in the Mid-Continent until they are now generally under posted crude schedules.

Daily Average Production for Week

	Jan. 22 1938	Bur. Mines Jan. est.	Jan. state allowables	Jan. 15 1938
Oklahoma City	119,950	.....	.....	121,950
Fitts	71,325	.....	.....	73,925
Remainder of state	352,375	.....	.....	347,725
Total Oklahoma	543,650	566,600	550,000	543,600
East Texas	492,898	.....	.....	492,253
West Texas	200,549	.....	.....	198,897
North Central Texas	104,099	.....	.....	104,449
Texas Panhandle	75,650	.....	.....	69,448
East Central Texas	89,100	.....	.....	87,300
Gulf Coast Texas	333,648	.....	.....	328,250
Southwest Texas	110,250	.....	.....	108,903
Total Texas	1,406,194	1,350,000	1,357,573	1,389,500
North Louisiana	80,370	.....	.....	79,485
Gulf Coast Louisiana	169,800	.....	.....	170,100
Total Louisiana	250,170	238,400	256,000	249,585
California	716,750	678,300	678,300	711,250
Kansas	190,075	179,300	186,472	180,200
Arkansas	41,010	35,200	.....	41,055
Eastern fields	135,000	128,000	.....	136,900
Michigan	48,914	54,100	.....	50,426
New Mexico	107,170	103,100	107,100	107,170
Rocky Mountain area	69,170	72,900	.....	69,200
Total United States	3,508,103	3,406,800	.....	3,478,886

Increase of 29,217 bbls. daily.



RESERVES of More Than 500,000,000 Barrels Added During 1937

The answer to the often asked question, "Is the industry finding new oil as fast as it is depleting old pools?," is "Yes."

During the past year about 23,600 oil wells were completed out of 32,560 holes drilled in this country resulting in the finding of 223 new oil fields in 15 states. These discoveries, with additions to the fields previously found, have added to the oil reserves of this country 584,511,398 barrels of oil, bringing the total reserves as of January 1, 1938 to the total of 13,489,457,944 barrels.

All of this was accomplished in the face of an increased demand for oil of 165,003,403 barrels over the 1936 record output of 1,089,113,699 barrels. The total production for 1937 rose to 1,264,117,102 barrels, an all-time high in output.

Previous Reserves Revised

The details of the industry's accomplishments in 1937 are summarized in the accompanying table. The figures, which speak for themselves, have been compiled by the staff of The Oil and Gas Journal located in the oil centers of the country, assisted by petroleum engineers and geologists especially qualified to advise upon these matters. For those who delight in studying statistics detailed facts regarding changes in the various fields in this country are also given and by comparing these figures with the 1935 and 1936 report of reserves published in The Oil and Gas Journal of January 28, 1937, it will be possible to follow the past three years performance of the industry.

To secure these data The Oil and Gas Journal staff carefully reestimated the conditions in all fields found in 1935 and 1936 in the light of developments during and prior to the year 1937. First reports of acreage and estimated production were scrutinized and it will be noted that 403,107,000 additional barrels of oil were accounted for through new developments in old fields. This difference is obtained by subtracting the estimated proven reserve figure for January 1, 1937, 12,501,839,546 barrels, from the reserves as revised for January 1, 1938, or 12,904,946,546 barrels.

Extensions are summarized in the tables giving fields by states and indicate added oil found by either deeper drilling or extending the field boundaries beyond previous estimates through new wells drilled to prove a whole structure.

The accompanying summary table was compiled by taking the "estimated proven reserve, January 1, 1937" figures and adding the revised 1935 and 1936 discovery figures in place of the old figures furnished last year. From that total the production for 1935 and 1936 was deducted and in this manner a new "Reserves Plus Discoveries" column was secured.

The 1937 production was deducted from the "reserves plus discoveries" figures to secure the "proven reserves for January 1, 1938." The last column represents the differences between the reserves by states at the beginning and end of 1937. The total reserves at the start of this year were 13,488,457,944 barrels and the estimated reserves at the beginning of 1937 were 12,501,839,546 barrels. This shows a difference of 987,618,398 barrels of oil.

It should be clearly understood just how this gain of 987,618,398 barrels is determined. Of the total, 584,511,398 barrels represents the excess new reserves for 1937 over production for that year. The remaining 403,107,000 barrels is due to the revision of the 1935-1936 reports on a basis of new information available in January this year.

The two page map shows the approximate location of the new oil fields by counties in 14 states where oil was found since January 1, 1937. It indicates the trend of development. There were several "hot spots" such as western Kansas, southwestern Texas and along the Gulf Coast. A survey of conditions for 1938 indicates continued drilling activity in all areas and the possibility that added exploratory work will be done in some basin areas where it is known conditions are favorable for the accumulation of oil and gas in stratigraphic traps and hidden pools. This type of work has been under way for some time and it is expected it will be expanded materially in 1938 because most of the now proven area has been largely drilled up and new territory must be opened if the rate of discovery is to be maintained as indicated by the demands of the industry for new oil.

Texas Leads in Reserves

Texas led last year in discovery of new oil, production and addition to reserves. This first position was largely due to the development of the deep sand in the K.M.A. field in Wichita-Archer counties in the northern part of the state and the finding of large fields in Gaines County, west Texas, and at Friendswood, Harris County, on the Gulf Coast. These three fields added over 630,000,000 barrels to Texas estimated reserves.

The discoveries in New Mexico were not numerous, but it is estimated the Vacuum field in Lea County, developed during 1937, has added 128,000,000 barrels of new oil, while extensions to other fields increases reserves an additional 35,550,000 barrels.

Southern Louisiana lists 14 new fields with reserves of 107,600,000 barrels and extensions to other fields previously found of 52,700,000 barrels, according to revised figures.

Western Kansas came in for a very intensive campaign of drilling last year and 53 new fields report reserve 111,700,000 barrels.

California and Oklahoma the second and third largest producing states did not fare so well in new discoveries. California added only 151,000,000 barrels of oil by new fields and extensions to others, while Oklahoma increased reserves by only 72,730,000 barrels.

The new development in Illinois added 17,120,000 barrels and extensions in the Bartelso field in Clinton County increased the oil reserves by 930,000 barrels. Kentucky, also in the Illinois Basin area, shows new reserves of 6,037,500 barrels and Indiana is credited with 500,000 barrels in one new field in Prairie County, so the activity in the Illinois Basin area last year has added a total of about 25,000,000 barrels. Details are given in accompanying tables.

By L. G. E. BIGNELL

Coline field, Ventura, California — Courtesy Caterpillar Tractor Co.

CALIFORNIA

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
East Round Mountain (Pyramid Hills), Kern	125	1,500,000
North Mount Poso, Kern	250	3,500,000
Long Beach extension, Los Angeles	75	1,000,000
Rio Bravo, Kern	500	25,000,000
Canal, Kern	500	15,000,000
Total	1,440	46,000,000

Additions to Fields Discovered Prior to 1937

Rosecrans (deep Miocene zone), Los Angeles	500	5,000,000
North Belridge, Kern	50	5,000,000
El Segundo, Los Angeles	400	1,500,000
Wilmington, Los Angeles	1,250	17,500,000
Dominguez (eighth Callender zone), Los Angeles	350	1,000,000
Santa Maria Valley, Santa Barbara	2,500	30,000,000
Ten Section, Kern	150	20,000,000
Greeley, Kern	150	20,000,000
Ventura Avenue, Ventura	60	5,000,000
Total	5,410	105,000,000

WYOMING

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Lance Creek, Niobrara:		
Upper Minnelusa	800	8,000,000
Middle Minnelusa	3,500	17,500,000
Garland, Big Horn Park	500	4,000,000
Gooseberry, Park	120	720,000
Total	4,920	30,220,000

Discoveries in 1938

Badger Basin, Park	1,000	4,000,000
Garland, Big Horn	200	3,000,000
Byron, Big Horn	400	6,000,000
Wertz, Carbon	300	3,000,000
Total	1,900	16,000,000

Discoveries in 1935

Medicine Bow, Carbon	1,080	20,500,000
Rock River, Carbon	200	3,000,000
Quealy, Albany	200	3,000,000
Lance Creek, Niobrara	2,150	35,500,000
Hidden Dome, Washakie	160	250,000
Sheep Creek, Fremont	100	400,000
Total	3,890	62,650,000

MONTANA

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Kevin-Sunburst (extensions), Toole:		
Sunburst sand	185	240,000
Madison	395	386,000
Cut Bank (extensions), Glacier	170	595,000
Total	750	1,221,000

Discoveries in 1936

Cut Bank, Glacier	4,573	6,859,000

COLORADO

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Wilson Creek, Rio Blanco	320	5,000,000

Discoveries in 1936

Powder Wash, Moffat	250	2,500,000

Discoveries in 1935

Gramps, Archuleta	400	5,000,000

NEW MEXICO

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Vacuum, Lea	12,800	128,000,000

Extensions in 1937

Monument, Lea	2,760	35,000,000
Langlie, Lea	220	550,000
Total	2,980	35,550,000

Discoveries in 1936

Monument, Lea	9,760	90,000,000
Hardy, Lea	4,000	16,000,000
Penrose, Lea	5,100	15,300,000
Skelly-Sims, Lea	2,560	7,680,000
Mattix, Lea	3,800	1,400,000
Langlie, Lea	1,900	4,750,000
Total	27,120	135,130,000

Discoveries in 1935

Monument, Lea	6,000	60,000,000

(Continued on Page 50)

Known Reserves January 1, 1937-1938, New Discoveries and Production for 1937

	REVISED PROVEN RESERVES JAN. 1, 1937	NEW DISCOVERIES 1937	RESERVES PLUS DISCOVERIES	PRODUCTION 1937	PROVEN RESERVES JAN. 1, 1938	CHANGES INCREASE (+) DECREASE (—)
California	3,182,411,542	46,000,000	3,228,411,542	238,591,887	2,989,819,655	—192,591,887
Rocky Mountain:						
Wyoming	301,143,396	30,220,000	331,363,396	19,637,218	311,726,178	+ 10,582,782
Montana	56,893,111	1,221,000	57,914,111	5,799,364	52,114,747	— 4,578,364
Colorado	16,331,698	5,000,000	21,331,698	1,578,391	19,753,307	+ 3,421,609
Central and Southern States:						
New Mexico	498,328,220	163,550,000	661,878,220	38,438,072	623,440,148	+125,111,928
Texas	6,224,105,635	1,146,740,000	7,370,845,635	502,967,214	6,867,878,421	+643,772,786
Oklahoma	1,102,807,421	72,730,000	1,175,537,421	223,106,788	952,430,633	—150,376,788
Kansas	591,692,064	113,700,000	705,392,064	69,158,432	636,233,632	+ 44,541,568
Arkansas	54,364,069	37,700,000	92,064,069	12,181,083	79,882,986	+ 25,518,917
N. Louisiana	129,020,284	70,500,000	199,520,284	28,593,723	170,926,561	+ 41,906,277
Coastal Louisiana	362,335,074	124,000,000	486,335,074	61,833,579	424,501,495	+ 62,166,421
Eastern States:						
Illinois	28,210,000	18,050,000	46,260,000	7,426,000	38,834,000	+ 10,824,000
Indiana	3,441,000	500,000	3,941,000	821,200	3,119,800	— 321,200
Kentucky	30,038,000	6,037,500	36,075,500	5,496,500	30,579,000	+ 541,000
Michigan	46,563,032	12,520,000	59,083,032	16,410,751	42,672,281	— 3,890,751
New York	31,133,000	.....	31,133,000	5,464,500	25,668,500	— 5,464,500
Ohio	22,042,000	.....	22,042,000	3,549,900	18,492,100	— 3,549,900
Pennsylvania	207,060,000	100,000	207,160,000	19,173,500	187,986,500	— 19,073,500
W. Virginia	17,227,000	.....	17,277,000	3,829,000	13,398,000	— 3,829,000
Total	12,904,946,548	1,848,568,500	14,753,515,048	*1,264,117,102	*13,489,457,944	*+584,511,398

*Includes 60,000 bbls. miscellaneous production.

221 OIL FIELDS DISCOVERED IN 1937

Added 584,511,398 barrels to the reserves making a total of 14,753,515,046 barrels as of Jan. 1, 1938.

ARKANSAS

	FIELD	COUNTY
1	BUCKNER	COLUMBIA
2	SHULER	UNION
3	RODESSA	MILLER

CALIFORNIA

	FIELD	COUNTY
1	EAST ROUND MOUNT	KERN
2	NORTH MOUNT POSO	KERN
3	LONG BEACH EXTENSION	LOS ANGELES
4	RIO BRAVO	KERN
5	CANAL	KERN
6	ROSECRANS (DEEP)	LOS ANGELES

COLORADO

	FIELD	COUNTY
1	WILSON CREEK	RIO BLANCO

ILLINOIS

	FIELD	COUNTY
1	PATOKA	MARION
2	CLAY CITY	CLAY
3	CISNE	WAYNE
4	NOBLE	RICHLAND
5	RINARD	WAYNE
6	BEECHER CITY	
7	NEW CENTRALIA	CLINTON
8	OLNEY	RICHLAND

INDIANA

	FIELD	COUNTY
1	PRAIRIE CREEK	VIGO

KANSAS

	FIELD	COUNTY
1	LAKE CITY	BARBER
2	MEDICINE LODGE	BARBER
3	AINSWORTH-SOUTH	BARBER
4	BEAVER NORTH	BARTON
5	ELLINWOOD-NORTH	BARTON
6	KRAFT	BARTON
7	LANTERMAN	BARTON
8	SILICA-SOUTH	BARTON
9	TRAPP-SOUTH	BARTON
10	TRAPP-SOUTHWEST	BARTON
11		BUTLER
12		BUTLER
13	KING	BUTLER
14	FROG HOLLOW	COWLEY
15	ROCK-NORTH	COWLEY
16	TURNER	COWLEY
17	WETHERED	COWLEY
18	BLUE BILL	ELLIS
19	BURNETT	ELLIS
20	CRESS	ELLIS
21	EMMERMAN	ELLIS
22	HOBLITZ	ELLIS
23	VICTORIA	ELLIS
24		GREENWOOD
25		GREENWOOD
26		GREENWOOD
27		GREENWOOD
28	BERNHOLDT	MC PHERSON
29	GRABER	MC PHERSON
30	ALDRICH	NESS
31	IUKA	PRATT
32	NICKERSON	RENO
33	STERLING	RENO
34	BREFELDT	RICE
35	CRAMM	RICE
36	WHERRY-EAST	RICE
37	THURBER	RICE
38	WELCH-NORTH	RICE
39	THURBER	RICE
40	STEBBINS	ROOKS
41	STEBBINS-SHALLOW	ROOKS
42	ALLOH	RUSSELL
43	CORALENA	RUSSELL
44	HALL-NORTH	RUSSELL
45	OCHS	RUSSELL
46	TRAPP	RUSSELL
47	GURNEY-SOUTH	RUSSELL
48	VAUGHN	RUSSELL
49	ANDOVER-SMITH	SEDGWICK
50	OATVILLE	SEDGWICK
51	DERBY	SEDGWICK
52	DRACH	STAFFORD
53	JORDON	STAFFORD
54	KIPP	STAFFORD
55	SITTNER	STAFFORD
56	ZENITH	STAFFORD
57	ANNESS	SUMNER
58	ZYBA	SUMNER
59	GUGLER	TREGO

KENTUCKY

	FIELD	COUNTY
1	HARDIN HEIRS-EAST TRACT	OHIO-MC LEAN
2	MARKWELL NO.1	MC LEAN
3	COOK NO.2	MC LEAN
4	HOWELL NO.1	MC LEAN
5	DITTO NO.2	MC LEAN
6	HOWARD NO.3	DAVIESS
7	TAYLOR NO.1	DAVIESS
8	MC DANIEL NO.4	HANCOCK
9	BOLING NO.1	HANCOCK
10	AMERICAN FALLS NO.1	HANCOCK
11	HOUSE NO.1	HANCOCK
12	BROWN BROS. NO.2	HANCOCK
13	MASON NO.3	HANCOCK
14	LLOYD NO.1	OHIO

LOUISIANA - NORTH

	FIELD	COUNTY
1	LISBON	CLAIBORNE-LINCOLN
2	COTTON VALLEY (DEEP)	WEBSTER
3	SLIGO	BOSSIER

LOUISIANA - SOUTH

4	ABBEVILLE	VERMILION
5	BAYOU DES ALLEMONDS	ST CHARLES
6	BAYOU SALE (HORSESHOE BAYOU)	ST MARYS
7	GIBSON	TERREBONNE
8	LAKE LONG	LAFOUCHE
9	LIRETTE	TERREBONNE
10	NORTH CROWLEY	ACADIA
11	POTASH	PLAQUEMINES
12	QUARENTINE BAY	PLAQUEMINES
13	SOUTH ELTON	JEFFERSON DAVIS
14	SOUTH ROANOKE	JEFFERSON DAVIS
15	VENICE	PLAQUEMINES
16	WAX LAKE	ST MARYS
17	VILLE PLATTE	EVANGELINE

MICHIGAN

	FIELD	COUNTY
1	SOUTH BUCKEYE	GLADWIN
2	SALEM	ALLEGAN
3	ADAMS	ARENAC

MONTANA

	FIELD	COUNTY
	KEVIN-SUNBURST EXTENSIONS	TOOLE
1	3 MI. WEST	
2	3/4 MI. WEST	
3	1 1/2 MI. EAST	

NEW MEXICO

	FIELD	COUNTY
1	VACUUM	LEA

OKLAHOMA

	FIELD	COUNTY
1	AIRPORT	TULSA
2	CITRA	HUGHES
3	CENTRAHOMA	COAL
4	CROMWELL, SOUTH	SEMINOLE
5	FITTS, WEST	POTOTOC
6	FITTS, SOUTH	PONTOTOC
7	FREDERICK, HATLER AREA	TILLMAN
8	FREDERICK	TILLMAN
9	JESSE, HUNTON	PONTOTOC
10	LAMONT	GRANT
11	LANGSTON, NORTH	LOGAN
12	SALINA	SEMINOLE
13	SHAWNEE, EAST	POTTAWATOMIE
14	SHAWNEE, NORTH	POTTAWATOMIE
15	SPORN	LINCOLN
16	TECUMSEH	POTTAWATOMIE

TEXAS

SOUTHWEST TEXAS - DISTRICT NO.1

	FIELD	COUNTY
1	NASH CREEK	GUADALUPE
2	BURDETTE	CALDWELL
3	EZZELL	MC MULLEN
4	FRIO TOWN	FRIO
5	MANTHO-NELSON	BASTROP
6	LOST MULE	CALDWELL
7	NEW BATESVILLE	ZAVALLA

SOUTHWEST TEXAS - DISTRICT NO.2

	FIELD	COUNTY
8	EAST TELFENER	VICTORIA
9	STRAUCH (MC MURRAY)	BEE
10	NORTH MC FADDIN	VICTORIA
11	PLACEDO EXTENSION	VICTORIA
12	SOUTH BURNELL	BEE & KARNES

SOUTHWEST TEXAS - DISTRICT NO. 4

	FIELD	COUNTY
13	CHAPMAN RANCH	NUECES
14	EAST BRUNI	WEBB
15	EAST FREMONT	JIM WELLS
16	SO. RICKABY (EL TANQUE)	STARR
17	KILLAM	WEBB
18	LASBE	DUVAL
19	LA BLANCA	HIDALGO
20	LAMAR	ARANSAS
21	LAS ANIMAS	JIM HOGG
22	LONDON	NUECES
23	LUBY	NUECES
24	LUNDELL	DUVAL
25	MIDWAY	SAN PATRICIO
26	NORTH SAM FORDYCE	STARR
27	NORTH SWEDEN	DUVAL
28	OILTON	WEBB
29	RANCHO SOLO	DUVAL
30	RICKABY	STARR
31	RICHARD KING	NUECES
32	SANDIA	JIM WELLS
33	SO. CALLAHAM	MC MULLEN
34	SO. CLARA DRISCOLL	NUECES
35	SO. SEVEN SISTERS	DUVAL
36	STRATTON	NUECES
37	SWEDEN	DUVAL
38	THOMAS LOCKHART	DUVAL

TEXAS GULF COAST - DISTRICT NO.3

	FIELD	COUNTY
39	ALOINE (BAMMEL)	HARRIS
40	CALL	NEWTON
41	CEDAR BAYOU	CHAMBERS
42	NORTH CHEEK	JEFFERSON
43	CLAM LAKE	JEFFERSON
44	COTTON LAKE, SOUTH	CHAMBERS
45	GANADO	JACKSON
46	SPURGER (JOE'S LAKE)	TYLER
47	LA BELLE	JEFFERSON
48	PALACIOS	MATAGORDA
49	SANDY POINT	BRAZORIA
50	WILSON CREEK	MATAGORDA

EAST CENTRAL TEXAS - DISTRICT NO.5

	FIELD	COUNTY
51	COLLINSVILLE	GRAYSON
52	BOLIVAR	DENTON
53	LOTT	FALLS
54	OPELIKA	HENDERSON

EAST TEXAS - DISTRICT NO. 6

	FIELD	COUNTY
55	FLAG LAKE	HENDERSON
56	PERCILLA	HOUSTON
57	RODESSA-MARION	MARION

WEST CENTRAL TEXAS - DISTRICT NO.7

	FIELD	COUNTY
58	AVOCA	JONES
59	LEERAY	EASTLAND
60	MARTIN	YOUNG
61	ROBERTSON	YOUNG
62	SEC. 266	COLEMAN
63	SEC. 37 BLK. 15	JONES
64	SEC. 1 BLK. 44	YOUNG
65	SEC. 159	SHACKLEFORD

WEST TEXAS - DISTRICT NO. 8

	FIELD	COUNTY
66	BOHAGO	
67	DENVER	YOAKUM
68	JORDAN	CRANE
69	MASON	LOVING
70	SEMINOLE	GAINES
71	SLAUGHTER	HOCKLEY
72	SCALAN	DAWSON
73	WASSON	GAINES
74	WILSON	WARD

NORTH TEXAS - DISTRICT NO. 9

	FIELD	COUNTY
75		ARCHER
76		ARCHER
77		CLAY
78		CLAY
79		WILBARGER
80	K-M-A	WICHITA

TEXAS PANHANDLE - DISTRICT NO. 10

	FIELD	COUNTY
81		GRAY
82		MOORE
83		MOORE

WYOMING

	FIELD	COUNTY
1	GARLAND	BIG HORN & PARK
2	GOOSEBERRY	PARK
3	LANCE CREEK	NIOBRARA

THE OIL AND GAS JOURNAL RESERVE MAP

New oil fields by counties in the fourteen states where discoveries were made in 1937.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

"My Friends —"

Difficult though it may be, oil men should keep their feet on the ground and their heads cool while they consider the significance of the Madison case as calmly as they can.

First, the verdict does not jeopardize the practical operations of the industry as a whole for 1938 and future years. The industry now, as in the past, has within itself all the essentials for continued success.

Second, the verdict was much more of a reflection upon the government than upon the oil business.

Defense counsel in their final pleas properly emphasized that the entire oil industry in fact was before the bar. With equal propriety they might have added that the administration at Washington—in its past and future relationships with the oil business and industry in general—was also on trial.

If there has been one positive stand taken by an administration notorious for its inconsistencies it has been its opposition to chiseling and price-cutting with their concomitant effects on wages and unemployment.

Yet in this case the full strength of the legal power of the government was exerted to punish those who were endeavoring in good faith to carry out the very policy the administration professes to champion.

The member of the cabinet qualified through personal knowledge to testify on behalf of the defendants did not appear at Madison.

The prosecution insisted and the court ruled that only the letter of the law mattered. The "rule of reason" went out the window. The department of justice clamored for its "pound of flesh" because "it was so nominated in the bond."

A jury remote from the oil country and unfamiliar with the problems and accomplishments of the oil industry, and in a section of radical philosophies regarding business and politics, returned a not unexpected verdict.

The principal issues centered around whether gasoline buying from independent refiners by the defendants was authorized by the government under the NRA code and whether it was legally in line with the government's plan of industrial stabilization after the NRA.

If there had been no NRA there would have been no Madison trial.

This industry got behind the NRA program from its start on a basis not approached by any other major industry. The oil industry led the way out of the depression with a quick return to normal operations, more employment, the highest wage scales and continued low prices for its products. At the behest of the president it continued these benefits after the NRA.

The court effectively removed all code activities from the jury's consideration in its instruction:

> "Much has been said in this case about the NRA code for the petroleum industry and it has been suggested that one of the purposes of the code was to raise the price of gasoline.
>
> "Whether or not such was an objective of the code, the defendants would not be justified in combining with others to raise the price of gasoline, assuming that they had the power to do so, unless their activities in this regard were specifically authorized by the code or approved by the president of the United States or the secretary of the interior under the national industrial recovery act.
>
> "I instruct you as a matter of law that there is no evidence in this case of government approval which would exempt the activities complained of from the prohibitions of the Sherman act."

This instruction practically outlawed everything done by this and other industries under the code. What

is more important, without further clarification there is certain to remain the strong suspicion that the same situation applies to every other activity of the federal government now in force or that may be applied in the future.

All testimony relative to conditions in the industry which had a bearing on price developments during the 1935 and 1936 periods were swept aside in the court's instruction:

> "If you find an illegal combination it does not matter that there may have been also other factors which contributed to the raising of the prices, as for example, the existence of the Connally act, allocations or voluntary curtailment under the code or increased consumer demand, improvement in the economic conditions generally and the like."

In this same vein, commenting upon justification of the buying activities, the court continued:

> "And it does not matter how helpful or beneficial such illegal activities may have been to the defendants or to the independent refiners or to any other class of persons."

With these and other instructions the court narrowed down the case to the bare charge of cooperative buying in its relationship to price, barring practically everything that had to do with motives and effect. It leaves the impression that if a man rushed across the street to save a life, the government would be mainly concerned with the fact that the man did not cross at the intersection and would bring a jay-walking charge.

The view that the oil industry has had regarding the scope of the industry's activities under the code was aptly summarized in Tulsa Saturday by General Hugh S. Johnson, former NRA administrator, following announcement of the Madison verdict.

> "The only purpose of any NRA code was to increase wages, improve working conditions and stabilize industry," the general asserted. "In two natural resource industries—bituminous coal and petroleum—prices had fallen so low that there was no disagreement anywhere that conservation of these expendable resources required price raising to a reasonable figure consistent with the public interest. The price of petroleum in East Texas was as low as 10 cents a barrel and the whole oil country was in a state of collapse.
>
> "To hold now that the price raising was inexcusable seems to me to ignore and contradict the main tenets of the Roosevelt recovery program.
>
> "Secretary Ickes, oil administrator under the code, is indirectly responsible for the approval of the price-fixing provision in the petroleum industry code which was intended solely to raise the price of crude oil and of gasoline and everyone in Washington, including the president, knew that was the only purpose and all approved that purpose."

The verdict says the defendants in carrying out the administration policy were guilty of a technical violation of the antitrust act. The primary objective of the antitrust law was to protect the consumer against extortionate prices. The prosecution at Madison never even alleged that the cost of gasoline to the consumer had been raised as a consequence of the supposed conspiracy. The price paid by the consumer was not increased. The consumer made no complaint. The only result of the price change, brought about primarily by improved conditions, was a more equitable distribution of the gasoline margin.

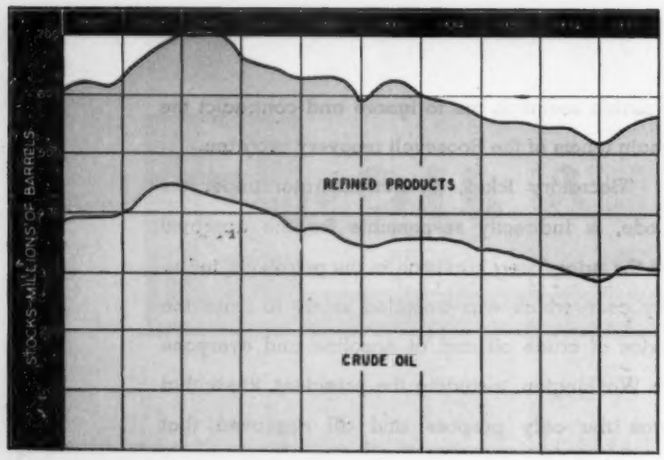
The other purpose of the antitrust law was to protect the smaller units in an industry from being driven out of business by a monopoly. Instead of the small refiners being driven out of business in this case, the whole effect was to help them to remain in business.

The effects of this particular "victory" like so many other hollow "victories" of the current economic theories, will fall most heavily upon the very people the antitrust law was supposed to protect, the smaller units who were in danger of extermination.

The small refiner has most at stake in this verdict. It may mean the death knell for him. This is too significant to be ignored.

It increases the bewilderment caused by the sharply conflicting attitudes of two branches of the same administration. It adds to the confusion of a governmental policy which includes a cycle of proffered cooperation with business followed by a cycle of pronounced hostility. Or can that be one way of intimidating business into acquiescence in a program of more drastic regulation than any yet proposed?

From this verdict the industry has learned that cooperating with government on business matters can be sadly disillusionizing. It proves anew that industry and government should operate in entirely different spheres.



Inventories of crude and refined oils in the United States

Many New R
Made in P

By W. T. ZIEGENHAIN

Anticipating a year of record oil consumption and stable prices the petroleum industry entered 1937 with confidence and with a rather definite program of expansion in mind. As the year progressed oil consumption proved to be most encouraging. However, in the desire to satisfy this mounting demand oil producers overshot actual needs by about 3.7 per cent. If, in 1937, the industry within the United States had produced 1,234 million barrels of crude instead of 1,264 million barrels students of the oil industry probably would now have little to lament regarding the year's operations.

Crude Prices

This close balance between the supply and demand for crude oil throughout almost the entire year probably accounts for the unusual stability of the oil market structure all of the way from the posted price on crude to the gasoline filling station prices.

Early in the year the posted price on Mid-Continent crude oil was advanced 15 cents to establish 38° gravity crude at $1.26 a barrel, a price at which producers may show a reasonable profit even under curtailed operations and this level was maintained throughout the balance of the year.

Refinery Market

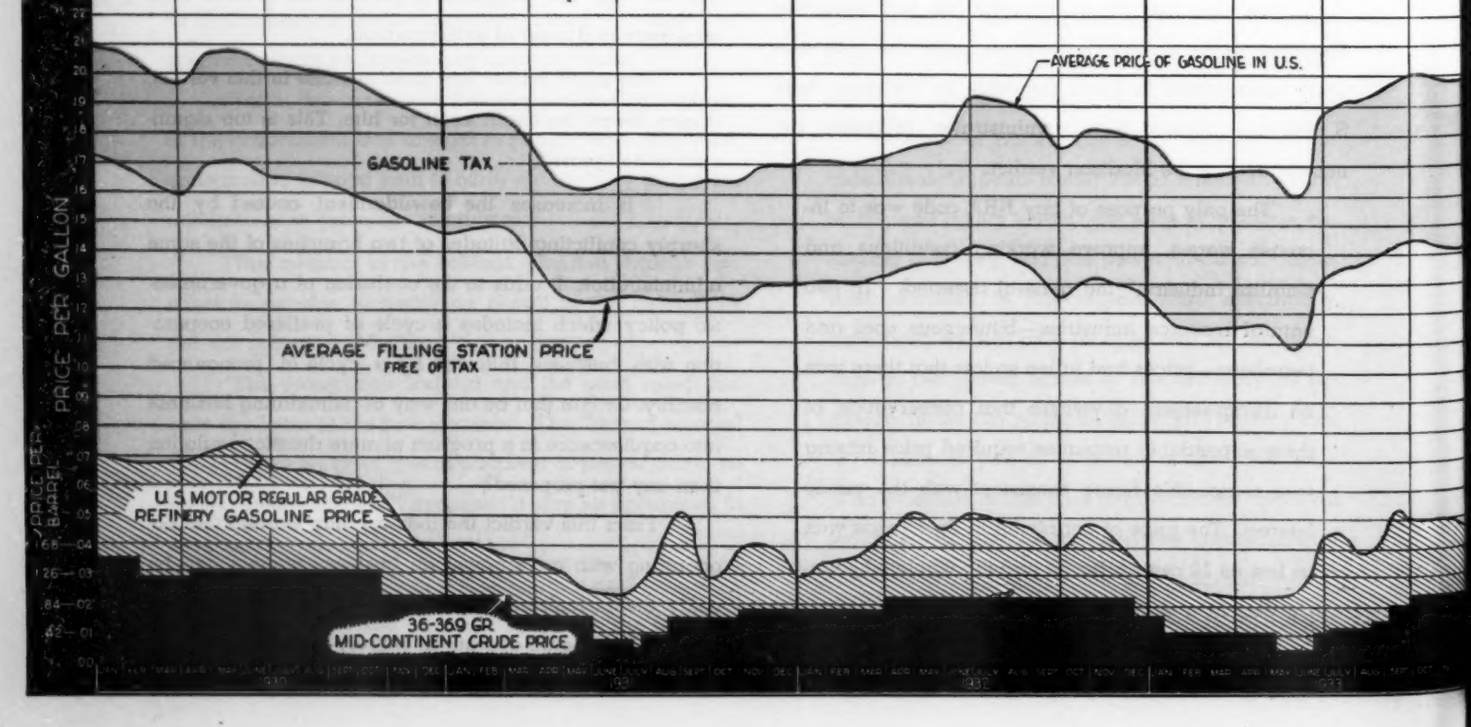
Similarly, refinery prices on all major products remained comparatively stable throughout 1937. House-brand or 68-70 octane gasoline sold wholesale at Mid-Continent refineries at about 6 cents a gallon throughout the first 9½ months of 1937 and then it gradually declined to 5 cents, the price prevailing at end of year.

By the close of the year most refiners found it difficult to show an operating profit with gasoline at the lower level and efforts were begun to curtail operations in the belief that a 5 to 10 per cent cut in refinery crude runs could quickly reestablish a 6-cent gasoline market. However, as January draws to a close, no new strength in the refinery gasoline market has asserted itself as a result of this movement.

Retail Gasoline Prices

Retail gasoline prices, throughout the entire United States during 1937 also showed marked stability. The average filling station price free of tax in 50 representative cities of the United States ranged between $.1409 per gallon on January 1 to $.1458 on June 1. The average

Trend in the retail gasoline market showing average price of gasoline in 50 scattered cities throughout the United States, the growing gaso


PRICE PER GALLON
PRICE PER BARREL
AVERAGE PRICE OF GASOLINE IN U.S.
GASOLINE TAX
AVERAGE FILLING STATION PRICE
FREE OF TAX
U.S. MOTOR REGULAR GRADE REFINERY GASOLINE PRICE
36-36.9 GR MID-CONTINENT CRUDE PRICE

Records Past Year

for the year was $.1440 which price, while only three-tenths of a cent above the average for 1936, was the highest for any year since 1930.

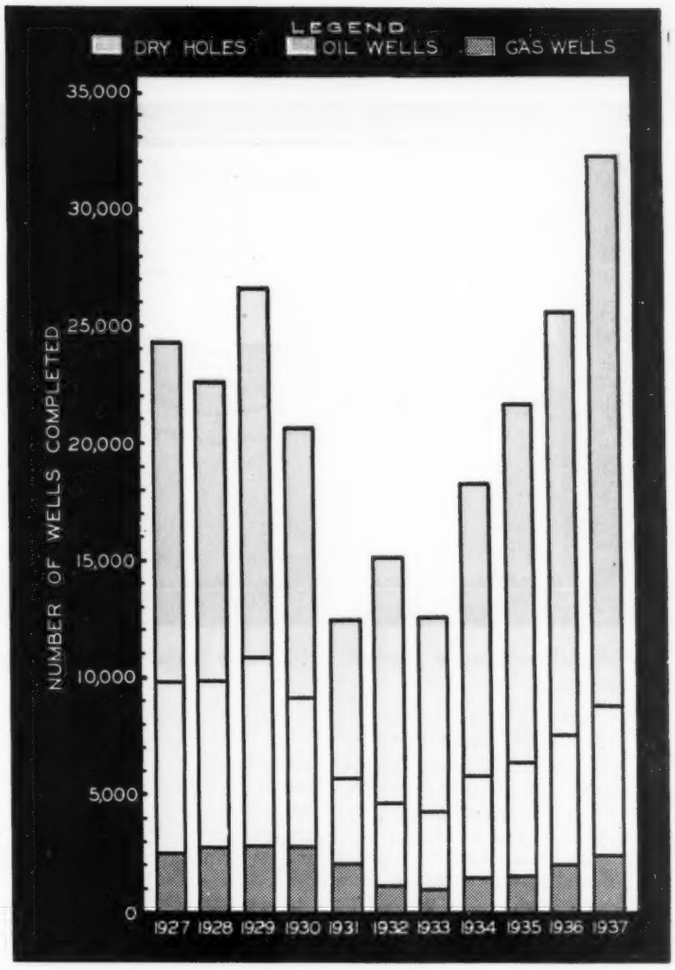
Few Price Wars

The year was remarkably free from the local price wars that seemed inherent in metropolitan oil marketing. This change might have come as a result of dealer marketing in contrast with the earlier practice of operating company-owned stations on a marginal-contract basis. However, whether the method of marketing or the stability of crude and refinery prices accounted for the stable retail market, sales volumes through retail outlets proved to be unusually satisfactory.

The importance of stable retail gasoline markets throughout the United States becomes apparent when it is realized that more than two billion dollars in trade now pass annually through the 350,000 filling stations throughout the country. Filling station sales represent about 10 per cent of the total retail trade in any community.

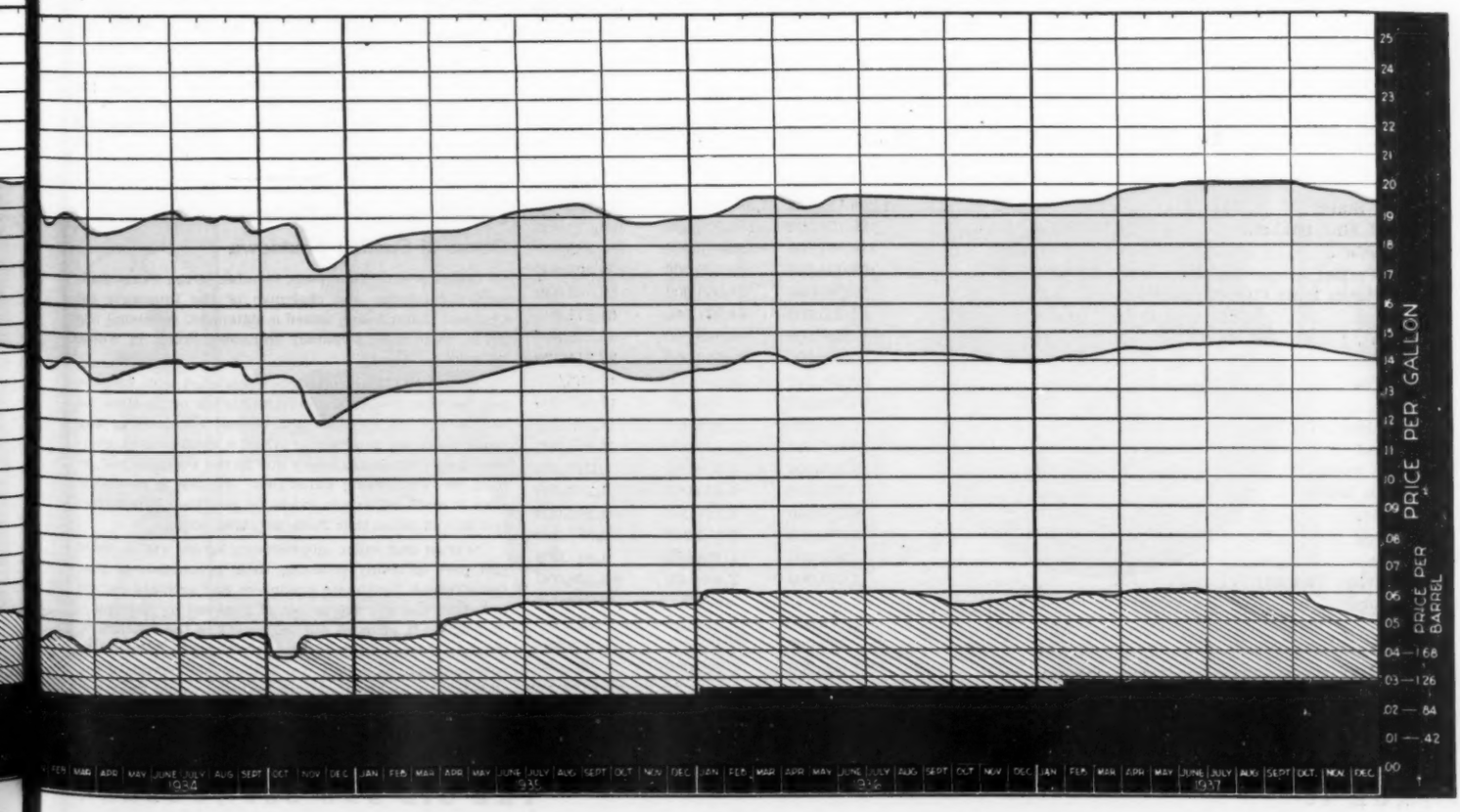
Well Completions

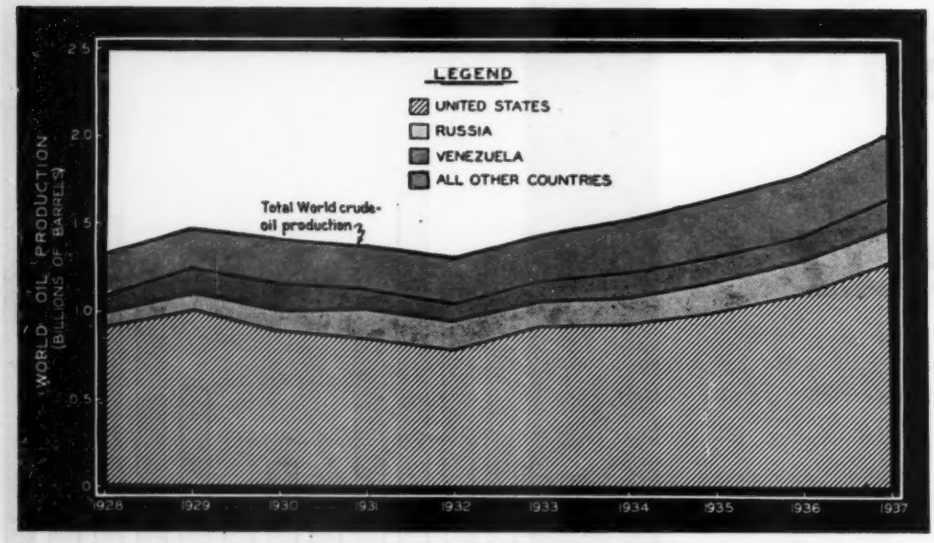
Obviously no industry handling this volume of business annually would feel secure if it could not control adequate supplies of its raw materials for many years into the future. The oil industry has taken pride in adequately guarding its future in this respect from its beginning. To accomplish this the industry has resorted to every known means to locate oil deposits and has tried each year to find new oil reserves which were at least equal in volume to the quantity of oil produced. To determine with reasonable defi-



Completions as a total of oil wells, gas wells and dry holes

line tax burden, the Mid-Continent refinery gasoline price for regular grade and the posted price on 36-37 gravity Mid-Continent crude





Relationship of crude production by years among the three largest oil producing countries

niteness the extent of these reserves, it is necessary to drill a large number of wells.

The year 1937 saw the greatest number of wells drilled in the history of the industry with the exception of 1920. Approximately 33,000 wells were drilled for oil and gas during 1937. This is about 7,000 more than were drilled in 1936 and 6,000 above 1929. The total footage drilled in 1937 undoubtedly established a new all-time record.

It is significant that while more wells were completed in 1937 than in any recent year, there was not a proportionate increase in the number of dry holes. The number of dry holes drilled in 1937 remained below those drilled in either 1927, 1928, 1929 or 1930, a period during which there was less immediate need for wildcatting. The relative number of well completions over the period is most easily seen on the accompanying chart.

World Oil Production

While the balance between world oil production within the borders of the United States is of immediate importance, the trend of world oil production must be recognized in estimating our exports and possible imports of crude oil.

In 1937 the world outside of the United States produced 758,370,000 bbls. of oil which, when added to the 1,264,117,102 bbls. produced in the United States, brings the total output of crude oil in the world for the year to 2,022,487,102 bbls., a record for all time. This is 229,054,102 bbls., more than in 1936. It is significant that in 1937 as the world demand for petroleum increased the United States provided about 70 per cent of this increase.

Retaining second place the U.S.S.R. is shown to have produced 199,175,000 bbls. of crude in 1937. Third in importance is Venezuela which is credited with production during 1937 of 186,804,000 bbls. of oil. It is interesting to note that Venezuela is boosting oil production at a much more rapid rate than the U.S.S.R.

Similar increases in the annual production of crude oil by countries is revealed in the following table: Particular attention is called to the output of Iran and Bahrein Island. Notable among the countries which are showing rather sharp declines is Rumania.

Production of Crude Oil by Countries in Each of Last Three Years

(Barrels of 42 gallons)

	1937	1936	1935
United States	1,264,117,102	1,098,516,000	996,596,000
U.S.S.R. (Inc. Sakhalin)	199,175,000	191,916,000	184,024,000
Venezuela	186,804,000	155,913,000	148,889,000
Iran (Persia)	78,060,000	62,565,000	57,304,000
Netherlands India (Inc. Br. Borneo)	58,500,000	54,080,000	52,560,000
Rumania	53,300,000	64,991,000	61,371,000
Mexico	45,900,000	40,819,000	40,235,000
Iraq	31,200,000	30,410,000	27,311,000
Colombia	20,298,000	18,484,000	17,598,000
Peru	19,008,000	17,595,000	17,067,000
Argentina	16,400,000	15,455,000	14,295,000
Trinidad	15,155,000	13,237,000	11,671,000
British India	9,805,000	9,619,000	9,218,000
Bahrein Island	7,762,000	4,645,000	1,265,000
Poland	3,715,000	3,737,000	3,812,000
Germany	3,078,000	3,112,000	2,937,000
Canada	2,920,000	1,498,000	1,447,000
Japan (Inc. Taiwan)	2,470,000	2,408,000	2,208,000
Ecuador	2,166,000	1,951,000	1,732,000
Egypt	1,165,000	1,202,000	1,295,000
France	489,000	533,000	539,000
Others*	1,000,000	747,000	594,000
Totals	2,022,487,102	1,793,433,000	1,653,469,000

*Others include: Czechoslovakia, Austria, Albania, Bolivia, Italy, Morocco, Algeria, Cuba and Hungary.

Montana Conservation Board Delays Decision on Proration

GREAT FALLS, Mont., Jan. 22. — Concluding its hearing the State Oil Conservation Board has taken under advisement petitions for and against proration in northern Montana fields. Findings will be submitted to Governor Roy E. Ayers, who requested the hearing. L. B. O'Neil, of Cut Bank, chairman, could give no indication when a decision will be reached.

Two witnesses were heard in the final two days: H. C. Bretschneider, former president of Midnorthern Oil Co., now Colorado representative on the Interstate Compact Commission, and R. Staley, proration umpire for New Mexico.

Mr. Bretschneider declared proration is now generally accepted as a permanent institution, based on sound engineering principles and will result in maximum ultimate recovery. No state which employs proration will ever give it up, he asserted, since the principle results in a stabilized market for the entire industry. He thought the estimates of Fred C. Platt, engineer, $360,000, on the cost of a 30-day test for establishing proration, were too high. In Kevin-Sunburst with 1,043 producing wells, it would be necessary to test only 243 which are producing in excess of the stripper classification.

Mr. Staley said New Mexico has had statewide proration since 1935, and has 2,400 wells subject to proration. Proration has not deterred refinery construction in New Mexico, with three new plants built since. He knew of no crude oil contracts disrupted as a result of proration.

End of the hearing found producers more optimistic, due to extension of marketing outlets through construction of new refineries and rumors of additional construction in adjacent states. Such construction, coupled with promised reductions in freight rates, will do much to relieve the local situation, it was felt.

The week's close saw formation of the Montana-Made Products Association, organized to stimulate sale of Montana-made products, with special emphasis upon the marketing of gasoline refined in the state from Montana crude. Annual importation of about 50,000,000 gallons of gasoline into the state was cited as proof that a wider Montana market, rather than proration, would provide an outlet for state wells.

The group named W. M. Fulton, pioneer operator, as president, with J. N. Thelen, Great Falls operator, as vice president, and L. R. Hannah, of Shelby, secretary-treasurer.

Speakers declared that in several counties the movement has resulted in a virtual boycott of pumps retailing imported gasoline, and in the inclusion of "Montana-made" gasoline specifications in calls for bids by various counties and municipalities. It is planned to organize the state by districts, represented on an executive board.

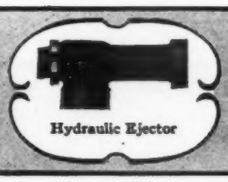
Colonel Thompson Explains Cause of Sunday Shutdown

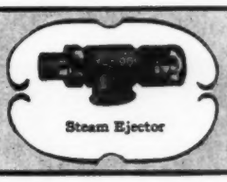
Col. Ernest O. Thompson, member of the Texas Railroad Commission and chairman of the Interstate Oil Compact Commission, issued a statement, following the Texas commission's Sunday shutdown order, in which he said:

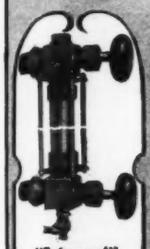
"Today the little refiner is threatened with destruction because, due to the overproduction of gasoline, he cannot sell his gasoline and cannot continue to buy crude from his producers. When a condition of overproduction continues, every one in the business will be hurt, the weak being killed first. All that is needed is time to work off excess stocks of gasoline. It is to correct this situation that Texas is taking action.

"I trust that other oil-producing states will do their just part in boldly reducing their production so that the efficient, legitimate producers and refiners can be protected and not driven out of business by monopoly. This action is, after all, for the benefit of the consumers, because if the independent competition is allowed to be smothered, monopoly would then take charge of the oil business, and, without competition, would doubtless make the public pay higher prices for gasoline. Disaster can come from too much production just as from a shortage of production."

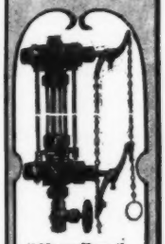
PENBERTHY PRODUCTS


Hydraulic Ejector

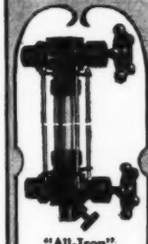

Steam Ejector


"Safeguard" Automatic Liquid Level Gage

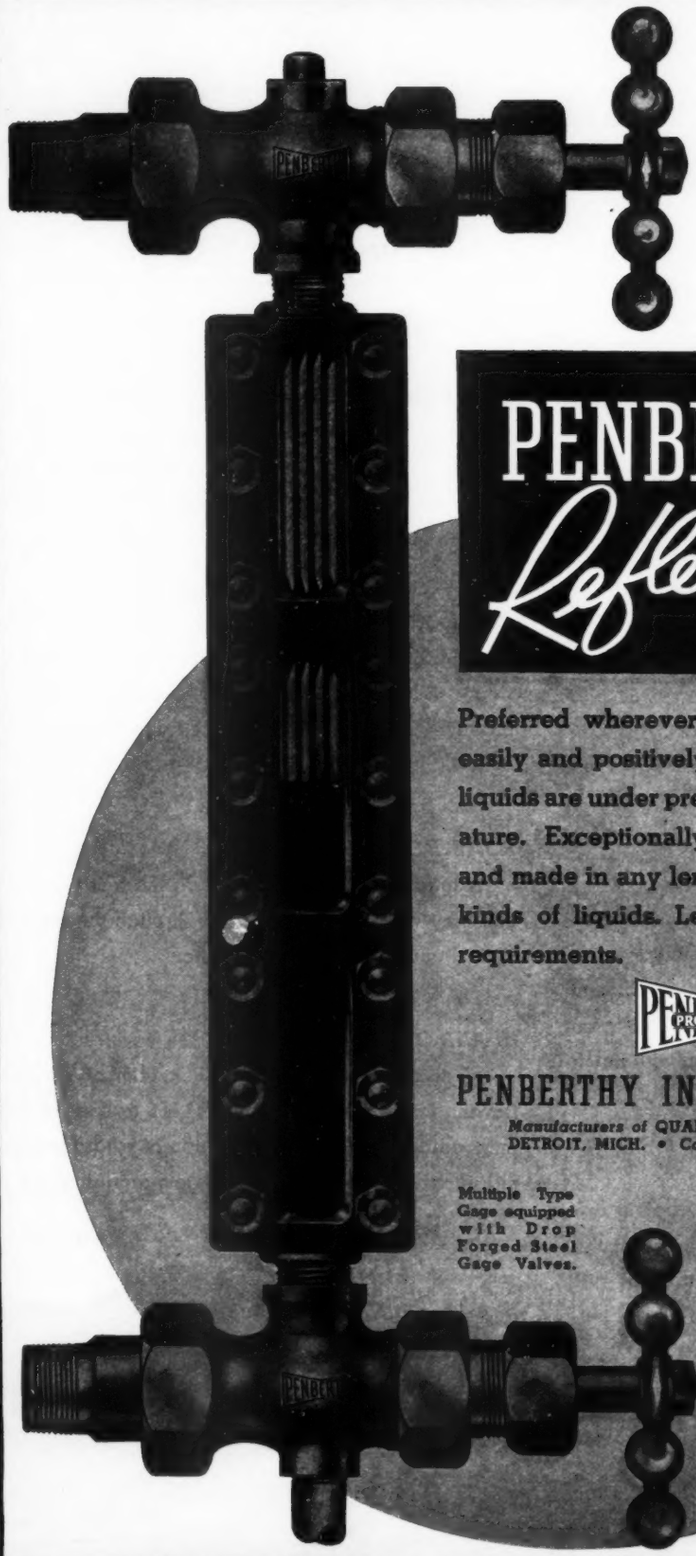
Automatic Injector


"Navy Type" Liquid Level Gage

Gas Engine Lubricator


"All-Iron" Automatic Liquid Level Gage

Snap Lever Oiler



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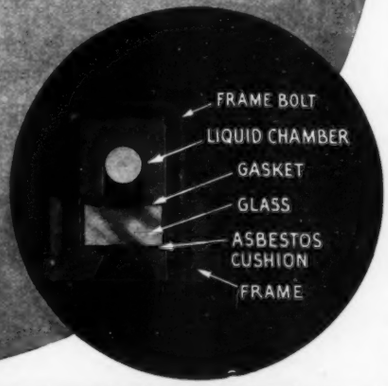

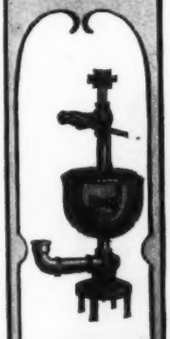
Automatic Cellar Drainer (Water or Steam Operated)

Automatic Electric Sump Pump

Spring Compression Grease Cup

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SPARKS FROM THE NEWS

INDUSTRY WAITS

The Madison verdict sustains the position of the Department of Justice in regard to the oil industry. Oil men will now wait to see if it also is to represent the viewpoint of the administrative branches of the government and the higher courts.

REMOTE CONTROL

The bit in California's deepest test is now 2.4 miles (12,640 feet) from the derrick floor. There is no better example of accomplishments in remote control.

GETTING BIGGER

One of the large commercial air passenger companies is planning to ask for bids on planes that will carry 54 passengers, 6,250 gallons of gasoline and 3,180 gallons of motor oil. The figures suggest the oil consumption expected in operating this type of service.

ENOUGH ON HAND

The fear of a shortage of fuel oil and distillate often offered in explanation for heavy refinery crude runs to stills during the fall and winter months no longer applies. Current statistics indicate that most refiners have sufficient stocks on hand to take care of requirements for rest of season with much smaller current output.

REMINISCENT

The crowded lobbies of Wichita Falls, Tex., hotels are reminiscent of 1918-1919 days following the completion of the Fowler well, the discovery test of the Burkburnett field, still producing several thousand barrels of crude daily.

SAFETY GAUGE

From experience over the past year it looks like the so-called "economic and practical" limit in crude inventories lies between 300 and 310 million barrels.

SHALLOW GUSHER

The largest oil well to be completed in Crawford County, Kansas, since 1917 came in the past week for 120 bbls. daily, which is not bad, seeing that production is from Bartlesville sand found at 355 to 406 feet.

NO SHORTAGE

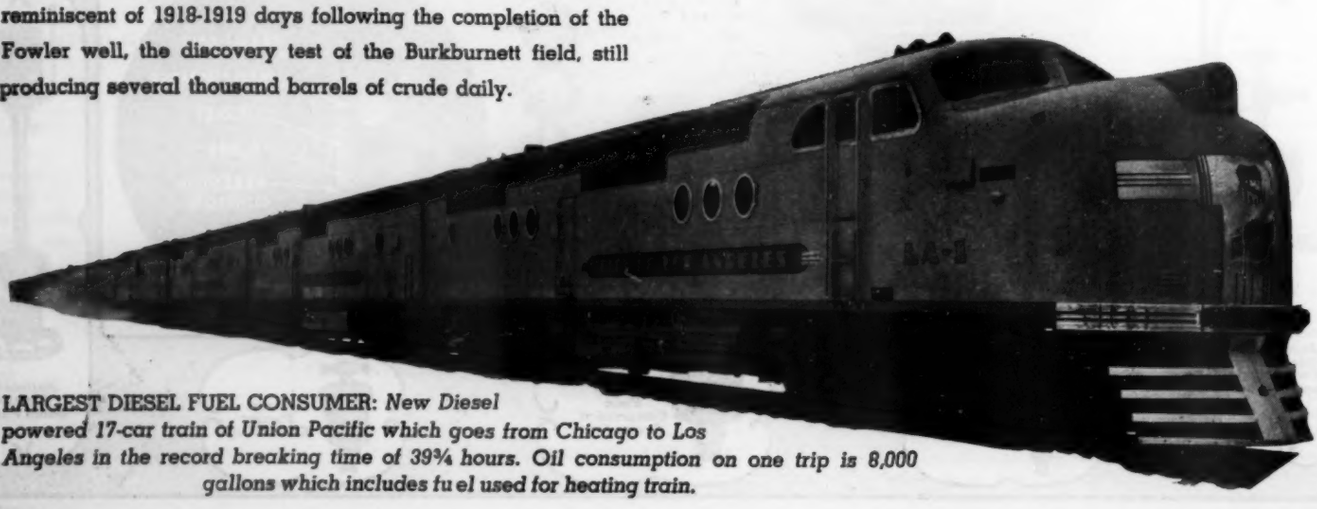
The balance sheet shows 223 new oil fields for 1937 in the United States, representing an excess of new reserves over production of 584,511,398 barrels for the year. 1938 started with the largest proven reserves in the history of the industry.

SOME HOLE

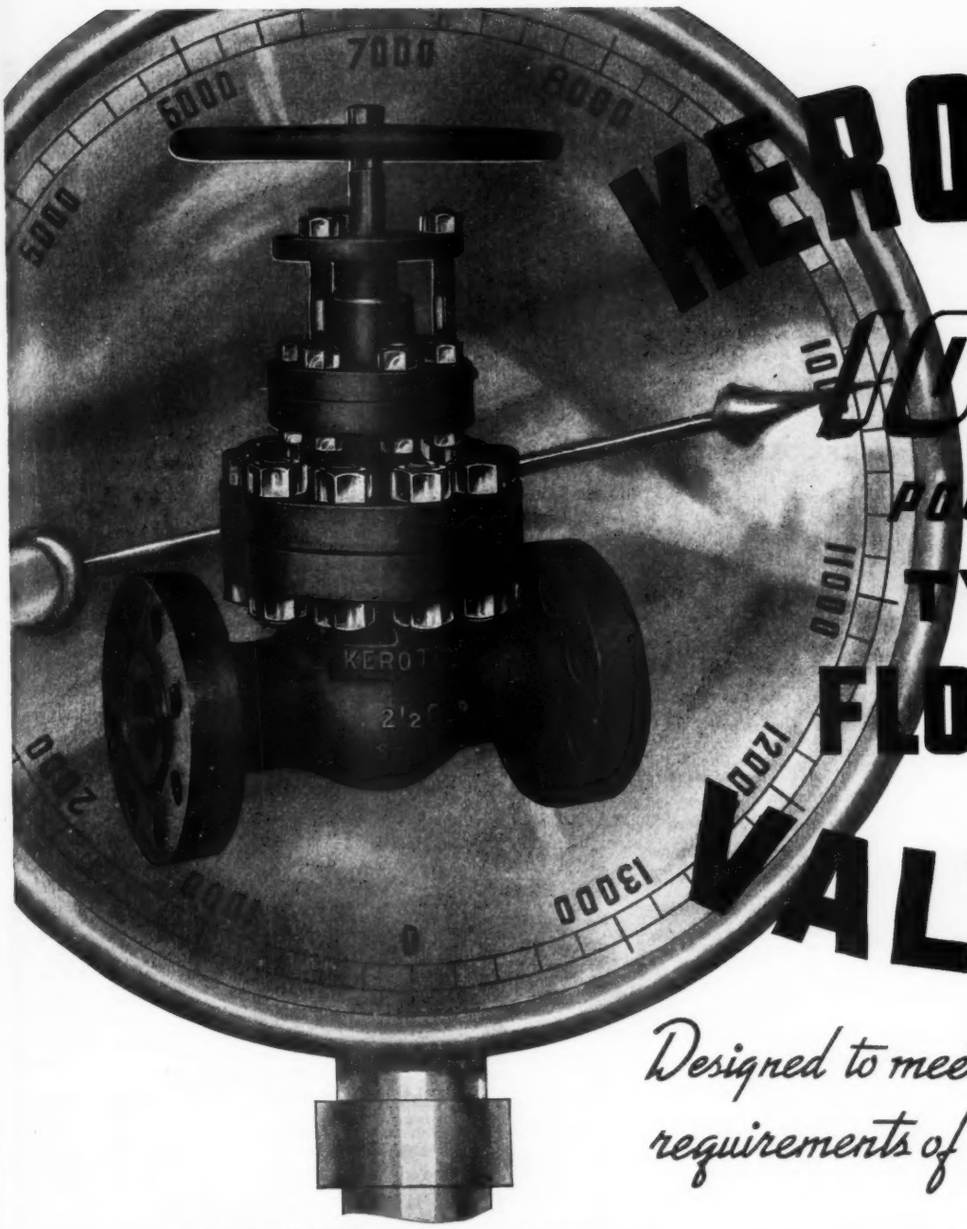
A total of 32,650 wells were drilled last year. Placed end to end they would make two holes through the center of the earth with a good start on the third hole.

IN AND OUT

A third well in the deep Fox pool of Oklahoma started flowing last week but not until 41,000 gallons of acid had been pumped into it. Another indication of what the industry has to put into its operations before it gets anything out.



LARGEST DIESEL FUEL CONSUMER: *New Diesel powered 17-car train of Union Pacific which goes from Chicago to Los Angeles in the record breaking time of 39¾ hours. Oil consumption on one trip is 8,000 gallons which includes fuel used for heating train.*



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Designed to meet all modern pressure requirements of today or tomorrow

MASSIVELY yet compactly built, the new Kerotest Type "G" Flow Line Valves challenges the highest pressures encountered in modern deep well drilling operations backed by the largest factors of safety yet incorporated in flow line valve design.

All castings are made of heat treated Manganese Molybdenum Steel with a minimum tensile strength of 100,000 pounds. The stems are heat treated nickel steel forgings and extra-large high-tensile bolting is used throughout.

Every part has been thoroughly tried and pressure-proved in strict accordance with the exclusive Kerotest 24 hour pressure-duration factory test with Kerosene as the testing medium — the test that has made Kerotest famous for dependability throughout the oil world.

KEROTEST

KEROTEST MANUFACTURING COMPANY

PITTSBURGH, PA.

(Continued from Page 39)

SOUTHWEST TEXAS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Batesville, Zavalla	40	800,000
Burdette, Caldwell	150	1,250,000
East Brunt, Webb	60	450,000
Exzell, McMullen	800	6,000,000
Frio Town, Frio	50	250,000
Hanthon-Nelson, Bastrop	40	200,000
Kilam, Webb	750	4,500,000
Labbe, Duval (new sand)	300	2,850,000
La Blanca, Hidalgo	400	2,000,000
Los Animas, Jim Hogg	50	250,000
Lost Mule, Caldwell	10	50,000
Lundell, Duval	300	1,950,000
Nash Creek, Guadalupe	20	100,000
North Sam Fordyce, Starr	75	750,000
North Sweden, Duval	3,000	45,000,000
Olfton, Webb	850	6,375,000
Rancho Solo, Duval	80	480,000
Ricaby, Starr	40	200,000
South Ricaby, (El Tangue), Starr	75	675,000
South Seven Sisters, Duval	100	750,000
Sweden, Duval	100	850,000
Thomas-Lockhart, Duval	80	400,000
South Callihan, McMullen	50	175,000
Total	7,420	76,305,000

Extensions in 1937

Alta Mesa, Brooks	200	500,000
Branyon (deep sand), Caldwell	75	100,000
Buchanan extension, Caldwell	50	100,000
Charamousca, Duval	140	350,000
Conoco Driscoll, Duval	50	100,000
Total	515	1,150,000

Discoveries in 1938

Alta Mesa, Brooks	150	750,000
Colorado, Jim Hogg	100	500,000
El Mesquite, Duval	50	200,000
La Sal Vieja, Willacy	20	500,000
Loma Vista, Duval	50	250,000
Macdonna, Bexar	10	10,000
Palangana, Duval	20	200,000
Peters, Duval	200	1,000,000
Alta Verde, Brooks	50	100,000
North Kohler, Duval	600	4,250,000
Government Wells (2,400-ft. sand), Duval	100	200,000
Samfordyce (3,000-ft. sands), Hidalgo	100	200,000
Total	1,450	8,169,000

Discoveries in 1935

Charamousca, Duval	200	2,000,000
Colmena, Duval	100	150,000
Hoffman, Duval	500	2,250,000
Loma Alta, McMullen	100	250,000
Loma Novia, Duval	7,400	40,000,000
Lopez, Webb-Duval	3,000	30,000,000
Mercedes, Hidalgo	250	1,000,000
O'Hern, Webb-Duval	1,450	9,300,000
Pearsall, Frio	2,000	6,200,000
Piedra Lumbre, Duval	400	2,000,000
Seven Sisters, Duval	5,000	34,500,000
Total	20,400	127,650,000

GULF COAST TEXAS (Lower District)

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Chapman ranch, Nueces	50	425,000
East Premont, Jim Wells	100	2,000,000
Lamar, Aransas	75	225,000
London, Nueces	100	650,000
Luby, Nueces	500	6,800,000
Midway, San Patricio	1,000	7,500,000
North McFaddin, Victoria	50	250,000
Richard King, Nueces	50	200,000
Sandia, Jim Wells	100	950,000
South Burnell, Karnes	350	2,625,000
South Clare Driscoll, Nueces	300	3,000,000
Stratton, Nueces	100	450,000
Strauch (McMurray), Bee	80	600,000
Telferner, East, Victoria	50	250,000
Placedo Extension, Victoria	50	250,000
Total	2,955	26,175,000

Extensions in 1937

Slick, Goliad and DeWitt	75	375,000
Heyser (N extension) Calhoun and Victoria	3,000	15,000,000
Keeran (5,600-ft. sand), Victoria	100	500,000
McCampbell (deep sand), Aransas	500	6,000,000
Saxet (5,500-, 6,700- and 6,900-ft. sands), Nueces	1,000	9,500,000
White Point (4,900-ft. sand), San Patricio	75	150,000
Refugio (deep sand), Refugio	75	547,500
West Premont (2,250- and 5,600-ft. sands), Jim Wells	275	1,512,500
Plummer, Bee	50	425,000
Total	5,150	34,010,000

Discoveries in 1938

Bentonville, Jim Wells	500	5,000,000
Flour Bluff, Nueces	3,700	60,000,000
Heyser, Calhoun	3,200	22,500,000
Hughes, Victoria	50	250,000
McCampbell, Aransas	500	5,000,000
Sullivan, Nueces	10	50,000
Voss, Bee	300	1,000,000
Weser, Goliad	200	1,000,000
West Premont, Jim Wells	300	2,000,000
Oakville, Live Oak	100	500,000
Saxet, Nueces:		
4,500-ft. sand	1,950	14,000,000
5,800-ft. sand	2,000	33,000,000
6,300-ft. sand	500	1,000,000
West Tuleta (3,700-ft. sand), Bee	1,120	2,000,000
Total	12,630	147,300,000

Discoveries in 1935

Baldwin, Nueces	200	1,000,000
Clara Driscoll, Nueces:		
3,750-ft. sand	800	4,000,000
3,900-ft. sand	50	500,000
Dinero, Live Oak	200	800,000
Dirks, Bee	1,650	9,000,000
Foley, Bee	200	750,000
Fort Merrill, Live Oak	100	400,000
Hords Creek, Goliad	100	500,000
Placedo, Victoria	3,650	35,000,000
Plummer, Bee	200	1,000,000
Plymouth, San Patricio	2,800	23,500,000
Ray, Bee	500	3,000,000
Rutledge, Bee	100	300,000
Saxet Heights, Nueces	1,750	5,000,000
Taft, San Patricio	500	16,000,000
Saxet (4,400-ft. sand), Nueces	1,800	13,000,000
Warden, Victoria	50	gas
Total	14,650	113,750,000

GULF COAST TEXAS (Upper District)

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Aldine, (Bammel), Harris	50	375,000
Call, Newton	50	1,000,000
Cedar Bayou, Chambers	40	120,000
Clam Lake, Jefferson	100	3,500,000
Friendswood, Harris	1,500	112,500,000
Ganado, Jackson	150	1,040,000
Labelle, Jefferson	150	750,000
North Cheek, Jefferson	200	3,400,000
Palacios, Matagorda	300	2,100,000
Sandy Point, Brazoria	300	3,000,000
South Cotton Lake, Chambers	250	1,000,000
Spurger, (Joe's Lake), Tyler	350	3,500,000
Wilson Creek, Matagorda	100	1,000,000
Total	3,540	133,285,000

Extensions in 1937

Big Hill, Jefferson	10	50,000
Danbury, Brazoria	100	1,000,000
Fannet, (Frio sand), Jefferson	200	5,000,000
Orange, Orange	100	2,000,000
Port Neches (N.W. flank), Orange	100	2,000,000
Segno (deep sand), Polk	100	1,000,000
West Columbia (N flank and Vicksburg), Brazoria	200	8,000,000
Dickinson (NW extension), Galveston	500	3,000,000
Hastings (NW extension and 5,600-5,800-foot sands), Galveston	400	12,000,000
Hardin Extension, Hardin	520	5,200,000
Total	2,230	39,250,000

Discoveries in 1936

Amelia, Jefferson	2,050	18,500,000
Clinton, Harris	125	950,000
Cotton Lake, Chambers	1,500	14,250,000
Fairbanks, Harris	600	4,000,000
Five Corners, Wharton	250	200,000
Greens Lake, Galveston	150	550,000
Hawkinsville, Matagorda	75	400,000
Hitchcock, Galveston	100	1,000,000
Lakeview, Wharton	20	gas
Lockridge, Brazoria	1,500	12,000,000
Magnet, Wharton	375	1,500,000
Nome, Jefferson	1,800	12,350,000
Old Ocean (10,000-ft. sand), Brazoria	1,500	25,000,000
Seabreeze, Chambers	600	5,000,000
Segno, Polk	500	4,000,000
Silsbee, Hardin	1,000	10,500,000
South Bay City, Matagorda	525	5,000,000
Van Vleck (8,200-ft. sand), Matagorda	100	1,000,000
Total	12,770	98,850,000

Discoveries in 1935

Anahuac, Chambers	6,000	250,000,000
Gillock area, Galveston	1,500	4,000,000
Hardin, Liberty	1,700	5,000,000
Katy, Waller	100	wet gas
Mauritz, Jackson	100	850,000
Pickett Ridge, Wharton	1,350	12,500,000
South Houston (4,000- and 4,700-ft. sands), Harris	700	9,500,000
Turtle Bay, Chambers	650	5,500,000
Van Vleck (7,400-ft. sand), Matagorda	1,900	20,000,000
Withers, Wharton	1,200	10,000,000
Total	15,200	416,200,000

EASTERN TEXAS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Opelika, Henderson	80	40,000
Percilla, Houston	40	25,000
Flag Lake, Henderson	40	20,000
East Texas field extensions:		
Rusk-Smith-Upshur-Gregg	5,000	30,000,000
Jefferson-Lodi, Marion	1,400	15,000,000
Total	6,560	45,085,000

Discoveries in 1936

Talco, Titus and Franklin	11,000	125,000,000
Sulphur Bluff, Hopkins	3,245	25,000,000
Total	14,245	150,000,000

Discoveries in 1935

Camp Hill, Anderson	120	500,000
Rodessa, Cass and Marion	7,600	90,000,000
Total	7,720	90,500,000

NORTH TEXAS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
K.M.A. (deep), Wichita-Archer	50,000	400,000,000
Landers, Denton	160	50,000
Rock Crossing (deep), Wilbarger	300	240,000
Zweifel, Young	160	60,000
Clark, Young	100	50,000
Total	50,720	400,400,000

Discoveries in 1936

Bryson, Jack	2,600	20,000,000
Anderson and Kerr, Cooke	400	2,500,000
Total	3,000	22,500,000

NORTH CENTRAL TEXAS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Avoca and Ivy extension, Jones and Shackelford	4,000	40,000,000
Orlando extension, Jones	600	7,200,000
Lewis, Jones	400	4,000,000
Total	5,000	51,200,000

Discoveries in 1936

Spurrier, Jones	100	100,000
Guiter, Jones	320	1,600,000
Total	420	1,700,000

Discoveries in 1935

Lueders, Jones	160	640,000

WEST TEXAS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Seminole, Gaines	3,000	30,000,000
Jordon, Crane	5,000	50,000,000
Mason, Loving	500	4,000,000
Scanlon, Dawson	40	40,000
Wasson-Denver, Gaines	18,000	180,000,000
Slaughter, Hockley	1,000	10,000,000
Moore, Howard	640	3,840,000
Harper, Ector	7,000	70,000,000
Bohogo and Bond, Gaines	300	2,000,000
Total	35,480	349,880,000

Discoveries in 1936

Sand Hills-Tubbs, Crane	1,920	17,680,000
Ray, Upton	80	320,000
Dodson, Glasscock	160	800,000
Landreth-Kirk, Gaines	40	40,000
Albaugh, Dawson	40	15,000
Total	2,240	8,855,000

Discoveries in 1935

Goldsmith, Ector	20,000	225,000,000
Foster, Ector	7,000	60,000,000
McKnight, Crane	20	20,000
Keystone, Winkler	7,040	56,320,000
Rotan, Fisher	300	2,000,000
Richards, Garze	160	640,000
Bennett, Yoakum	1,100	10,000,000
Total	35,620	353,980,000

OKLAHOMA

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Airport, Tulsa	300	750,000
Citra, Hughes	200	1,000,000
Centrahoma, Coal	80	400,000
Cromwell, South, Seminole	425	3,400,000
Fitts, West, Pontotoc	400	1,900,000
Fitts, South, Pontotoc	300	6,000,000
Frederick, Hatler Tillman	320	800,000
Frederick, Tillman	640	1,920,000
Jesse, Hunton, Pontotoc	1,280	12,800,000
Lamont, Grant	1,000	10,000,000
Langston, North, Logan	100	2,000,000
Salina, Seminole	160	1,600,000
Shawnee, East, Pottawatomie	80	280,000
Shawnee, North, Pottawatomie	160	800,000
Sporn, Lincoln	330	1,650,000
Tecumseh, Pottawatomie	60	240,000
Totals	5,835	44,640,000

Extensions in 1937

Doyle, (deep) Stephens	400	1,000,000
Allen, (deep), Seminole-Pontotoc	400	2,000,000
Clarita, Coal	100	200,000
Fitts (Cromwell), Pontotoc	1,500	4,500,000
Lincoln (Ordovician), Lincoln	80	480,000
Lincoln, (Prue), Lincoln	40	50,000
Lincoln, (Wilcox), Lincoln	40	40,000
Love (Viola), Love	40	40,000
Mannford (Wilcox), Creek	120	600,000

Milroy (Oil Creek), Stephens-Carter	940	9,400,000
Nuyaka, South, Okmulgee	160	800,000
Okfuskee, (Miscellaneous), Okfuskee	40	50,000
Seminole, (Hunton), Seminole	40	80,000
Seminole, (Senora), Seminole	40	50,000
Stephens (Dees), Stephens	40	50,000
Stockton (Dees), Love	200	500,000
Traugh (Boggy), Seminole	240	720,000
Traugh, (Wilcox), Seminole	290	5,800,000
Wagoner (Tyner), Wagoner	40	50,000
Weleetka, (Lower Gilcrease), Okfuskee	240	480,000
Weleetka, (Viola), Okfuskee	400	1,200,000
Totals	5,390	28,090,000

Discoveries in 1936

Billings (Wilcox), Noble	660	17,500,000
N. Earlsboro, Seminole	1,220	5,300,000
W. Lovell, Logan	200	600,000
Moore, Cleveland	800	25,000,000
Seward, Logan	160	400,000
Cement (deep), Caddo	1,000	10,000,000
E. Seminole (Cromwell sand), Seminole	1,000	5,000,000
Township 13-10, Okfuskee	80	480,000
Oklahoma City (extension), Oklahoma	2,600	65,000,000
South Wilzetta, Lincoln	160	1,600,000
Township 19-5, Payne	160	480,000
Carr, Payne	160	480,000
Adams, Hughes	200	1,500,000
Township 4n-3e, Garvin	160	400,000
Sheldon, Pontotoc	80	200,000
North Olympic, Okfuskee	1,550	6,425,000
Palmer, Pontotoc	340	1,190,000
South Hewitt, Carter	40	100,000
Fitts (Oil Creek sand) Pontotoc	100	500,000
Township 3n-4e, Pontotoc	100	100,000
N. Bethel, Seminole	560	4,200,000
N. Lucien, Noble	640	1,680,000
Crescent (lower Wilcox), Logan	200	4,000,000
Totals	12,170	152,135,000

Discoveries in 1935

Bay, Kay	250	1,000,000
Billings, (Detrital), Noble	560	2,500,000
Britton, Oklahoma	400	6,000,000
W. Chandler, Lincoln	640	6,400,000
Conservation, (Hunton) Pontotoc	340	500,000
Fitts, Pontotoc		
Upper McLish	2,400	48,000,000
Basal McLish	430	12,900,000
Fox deep sand, Carter	1,000	10,000,000
Grayson, Seminole	300	1,800,000
Jesse, Pontotoc	1,600	12,000,000
S. Keokuk, Seminole	1,500	13,500,000
S. Langston, Logan	160	1,000,000
E. Konawa, Seminole	400	600,000
Marathon, Noble	300	450,000
Olympic, Hughes	2,750	11,000,000
Sasakwa, Seminole	200	1,500,000
Stillwater, Payne	160	1,000,000
Tipton, Jackson	1,000	2,000,000
Wofford, Seminole	400	2,000,000
Totals	14,790	134,150,000

KANSAS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Lake City, Barber	640	3,200,000
Medicine Lodge, Barber	1,400	3,500,000
Ainsworth, South, Barton	840	2,520,000
Beaver, North, Barton	480	2,880,000
Ellinwood, North, Barton	200	500,000
Bloomer, Barton	400	3,200,000
Kraft, Barton	1,290	6,450,000
Lanterman, Barton	500	2,000,000
Trapp, South, Barton	1,000	7,500,000
King, Butler	160	400,000
Madden, Butler	40	50,000
Frog, Hollow, Cowley	200	400,000
Miscellaneous Cowley County	140	350,000
Rock, North, Cowley	200	600,000
Turner, Cowley	240	600,000
Weathered, Cowley	400	1,600,000
Miscellaneous Elk County	160	480,000
Blue Hill, Ellis	400	2,000,000
Burnett, Ellis	1,000	7,000,000
Cress, Ellis	1,180	8,280,000
Emmerman, Ellis	640	2,560,000
Koblitz, Ellis	320	960,000
Victoria, Ellis	20	50,000
Reese, Greenwood	200	500,000
Greenwood Miscellaneous	240	550,000
Schwab, Greenwood	40	100,000
Bornholdt, McPherson	640	1,600,000
Aldrich, Ness	440	1,100,000
Iuka, Pratt	400	2,000,000
Nickerson, Reno	320	800,000
Bredfeldt, Rice	400	1,000,000
Cramm, Rice	320	1,280,000
Wherry, East, Rice	480	1,680,000
Habiger, Rice	640	3,200,000
Welch, North, Rice	260	800,000
Stebbins, Rooks	200	200,000
Allan, Russell	560	1,960,000
Coralena, Russell	800	8,000,000
Hall, North, Russell	360	1,400,000
Ochs, Russell	400	1,200,000
Gurney, Russell		
Wingat, Rush	640	1,920,000
Vaughn, Russell	640	3,000,000
Andover, South, Sedgwick	400	1,000,000
Drach, Stafford	400	2,400,000
Jordan, Stafford	800	5,600,000
Kipp, Stafford	800	4,000,000
Sittner, Stafford	600	3,000,000
Zenith, Stafford	400	2,400,000
Annesa, Sumner	480	2,880,000
Nevitt, Sumner	100	250,000
Gugler, Trego	320	800,000
Total	24,130	111,700,000

Discoveries in 1936

Russell	14,360	49,000,000
Ellis	7,575	34,080,000
Barton	5,000	19,000,000
Chautauqua	520	3,000,000
Rice	8,080	52,100,000
Sumner	300	750,000
Rooks	320	960,000
Clark	640	4,800,000
Cowley	600	1,080,000
Pawnee	640	3,200,000
Ness	400	4,200,000
Trego	600	2,500,000
McPherson	600	3,000,000
Harvey	320	2,200,000
Ellsworth	320	1,600,000
Elk	160	800,000
Butler	320	1,040,000
Total	40,755	183,290,000

Discoveries in 1935

Barton	3,760	18,960,000
Russell	5,820	17,760,000
Ellis	2,120	10,580,000
Rice	2,040	10,220,000
Reno	3,950	13,820,000
Ellsworth	1,280	7,680,000
Butler	260	800,000
Cowley	1,480	4,630,000
Sedgwick	970	1,455,000
Elk	200	500,000
Sumner	400	5,536,000
Stafford	1,200	4,500,000
Scott	400	1,400,000
Rooks	600	2,100,000
Woodson	400	3,200,000
Harvey	960	6,720,000
Steckel field extensions, Barton	1,500	9,000,000
Total	27,340	118,851,000

ARKANSAS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Buckner, Columbia	50	750,000
Shuler, Union:		
Shallow	450	1,300,000
Jones sand	700	20,400,000
Permian	50	250,000
Rodessa, Miller	2,250	15,000,000
Total	3,500	37,700,000

Discoveries in 1936

Snow Hill, Ouachita	200	300,000
Troy, Nevada	120	900,000
Total	320	1,200,000

NORTH LOUISIANA

Discoveries in 1937

Pool and parish—	Estimated productive acreage	Estimated ultimate production
Lisbon, Claiborne and Lincoln	3,700	18,500,000
Cotton Valley, (deep) Webster	13,000	52,000,000
Total	16,700	70,500,000

Discoveries in 1936

Sligo (Pettit prod., flank gas field), Bossier	200	400,000

Discoveries in 1935

Rodessa, Caddo	8,500	110,000,000

GULF COAST LOUISIANA

Discoveries in 1937

Pool and parish—	Estimated productive acreage	Estimated ultimate production
Abbeville, Acadia	200	2,000,000
Bayou Des Allemands, St. Charles	200	5,000,000
Bayou Sale (Horseshoe Bayou) St. Mary	200	10,000,000
Gibson, Terrebonne	500	18,500,000
Lake Long, Lafourche	200	10,000,000
Lirette, Terrebonne	100	1,000,000
North Crowley, Acadia	400	12,000,000
Potash, Plaquemines	40	100,000
Quarantine Bay, Plaquemines	500	20,000,000
South Elton, Jefferson Davis	100	1,000,000
South Roanoke, Jefferson Davis	100	1,000,000
Venice, Plaquemines	500	20,000,000
Ville Platte, Evangeline	100	1,500,000
Wax Lake, St. Mary	200	5,500,000
Total	3,340	107,600,000

Extensions in 1937

Big Lake (8,300-foot sand) Cameron	150	1,275,000
Charenton (4,900-foot sand) St. Mary	50	600,000
Valentine (5,400 and 6,100-foot sands) Lafourche	80	2,400,000
Jennings (W flank) Acadia	325	9,125,000
West Hackberry (deep sand) Cameron	200	3,000,000
Total	805	16,400,000

Discoveries in 1936

Bayou Mallet, Acadia	300	2,500,000
Big Lake, Cameron	150	1,000,000
Charenton, St. Mary	150	1,200,000
South Jennings, Jeff Davis	100	750,000
Valentine, Lafourche	450	2,250,000
Total	1,150	7,700,000

Discoveries in 1935

Cheneyville, Rapides	100	1,500,000
Garden Island Bay, Plaquemines	200	10,200,000
Jeanerette, St. Mary	500	10,000,000
Lafitte, Jefferson	2,500	85,000,000
Lake Hermitage, Lafourche	125	1,150,000
St. Martinsville, St. Martin	125	2,500,000
Tepetate, Acadia	1,500	18,000,000
Dog Lake (7,100-ft. sand), Terrebonne	100	1,000,000
Total	5,050	129,350,000

Additions at Lafitte due to general extensions during 1937.

ILLINOIS

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Patoka, Marion	310	3,100,000
Clay City, Clay	842	8,420,000
Rinard, Wayne	10	100,000
Noble, Richland	470	4,700,000
Clsne, Wayne	30	300,000
Centralia (new), Clinton	20	200,000
Beecher City, Fayette	20	200,000
Olney, Richland	10	100,000
Total	1,712	17,120,000

Extensions in 1937

Bartelso, Clinton	93	930,000

Discoveries in 1936

Bartelso, Clinton	500	2,000,000

INDIANA

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Vigo, Prairie	70	500,000

KENTUCKY

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Hardin Heirs, Ohio-McLean	200	1,500,000
Markwell, McLean	40	300,000
Cook, McLean	5	37,500
Howell, McLean	15	112,500
Ditto, McLean	10	75,000
Howard, Daviess	15	112,500
Taylor, Daviess	50	375,000
McDaniel, Hancock	5	37,500
American Falls, Hancock	150	1,125,000
Boling, Hancock	5	37,500
House, Hancock	150	1,125,000
Brown Brothers, Hancock	75	562,500
Mason, Hancock	10	75,000
Lloyd, Ohio	75	562,500
Total	805	6,037,500

Discoveries in 1936

Bealers Knob, McLean	250	1,500,000

Discoveries in 1935

Livermore, McLean	700	4,500,000

MICHIGAN

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
South Buckeye, Gladwin	2,300	9,200,000
Salem, Allegan	670	2,680,000
Adams, Arenac	160	640,000
Total	3,130	12,520,000

Discoveries in 1936

Geneva, Midland	600	600,000
Clayton, Arenac	2,000	6,000,000
North Vernon, Isabella	800	2,000,000
Sherman, Isabella	1,600	4,000,000
Buckeye, North, Isabella	2,770	8,510,000
Total	7,770	21,110,000

Discoveries in 1935

Crystal, Montcalm	2,600	7,020,000
Birch Run, Saginaw	1,200	1,200,000
Total	3,800	8,220,000

PENNSYLVANIA

Discoveries in 1937

Pool and county—	Estimated productive acreage	Estimated ultimate production
Bradford, McKean	10	100,000

SANITY

A few refiners, who of course would like to participate more fully in the lusty market for heating oils, are steadfastly refusing to pile up burdensome inventories of gasoline in order to do it.

—OIL AND GAS JOURNAL, December 16, 1937

That's true

Profits that many a refiner might make on his furnace oil business are washed out by the straight-run gasoline he has to make at the same time—he can't sell it

If straight-run gasoline is drowning out profitable operation for you, here is the life preserver—it's the Dubbscracking process

You can run a Dubbscracking unit to suit the market all around the calendar

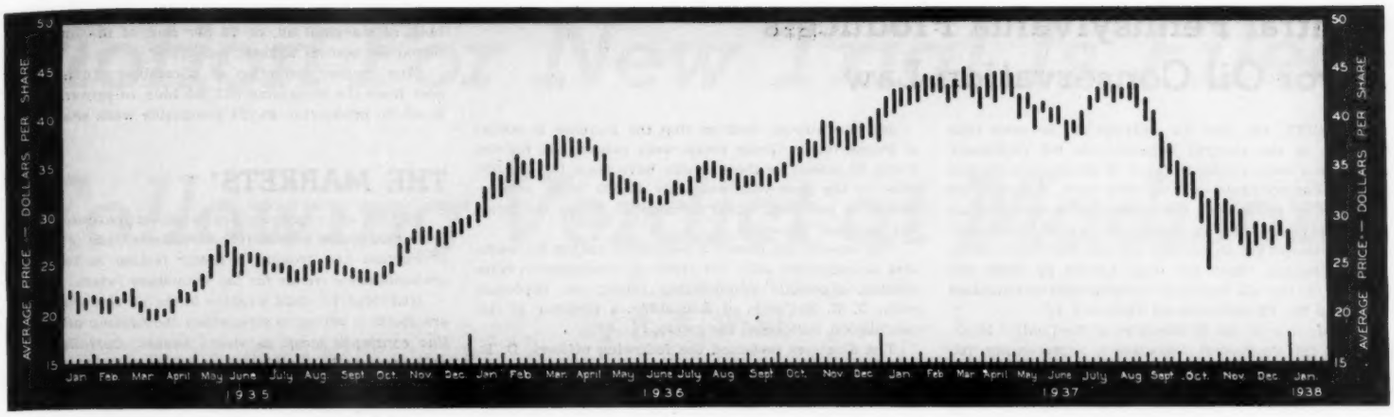
In the winter you run it to make more furnace oil and less gasoline

In summer you crack everything and make the biggest yield of the best gasoline and at lowest cost, royalty and all

Dubbscracking makes the best furnace oil as well as the best gasoline

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor



Average weekly high and low New York market quotations on common stocks of thirty representative petroleum companies

TRENDS in the Market Value of Oil STOCKS

By W. T. ZIEGENHAIN

The value of oil company common stocks during 1937 followed the course of industrial issues generally. Starting at a relatively high level at the beginning of the year, most issues gradually pushed into higher ground to effect a peak in March and then tapered off slightly throughout the period up to the middle of August, at which time values dipped badly. They continued to decline through the first few days of November but by the second week most of the "bargains" were absorbed and the average of the list recovered about one-third of its loss from the high. The average remained near this level throughout the balance of the year, tending to advance, but in a seemingly cautious manner.

Based upon the record dividend payments made by oil companies during 1937 a relatively high market value for their common stocks could have been justified at the close of the year. However, the industry felt the pressure of carrying relatively high gasoline and crude oil inventories, a consistent crude oil production in excess of current demands and a record tax load throughout all of its departments.

The final quarter earnings of many oil companies when issued will prove less impressive than those published for the first nine months. However, students of oil securities contend that when these fourth-quarter reports are made, the net earnings of most companies will not bring down the totals for the first nine months. They expect the oil industry to show net earnings from 25 to 35 per cent above that of 1936. These students may be influenced by the fact that oil company dividend declarations during 1937 were about 23 per cent higher than 1936, and thus established an all-time record.

Average High, Low and Closing Prices on Common Stocks of 30 Representative Oil Companies

(Listed on New York Markets)

1935—	High	Low	Close	1936—	High	Low	Close	1937—	High	Low	Close
January 5	22.55	21.69	22.23	January 4	31.48	29.45	30.87	January 2	42.22	40.08	41.05
January 12	22.43	20.95	21.18	January 11	33.05	30.12	32.62	January 9	42.97	40.45	42.15
January 19	21.59	20.65	21.39	January 18	34.24	31.96	32.64	January 16	42.98	41.23	42.15
January 26	21.92	21.25	21.56	January 25	34.29	32.13	33.92	January 23	43.25	41.27	42.94
February 2	21.72	20.94	21.30	February 1	35.44	33.50	34.74	January 30	43.61	41.60	43.03
February 9	21.68	20.80	21.47	February 8	36.32	33.24	35.28	February 6	44.44	42.20	43.45
February 16	21.73	21.23	21.56	February 15	35.74	34.24	34.59	February 13	44.28	42.61	43.35
February 23	22.36	21.34	21.52	February 22	35.84	33.89	35.25	February 20	44.03	42.44	43.17
March 2	21.65	20.99	21.34	February 29	35.84	33.68	35.04	February 27	43.39	41.49	42.37
March 9	21.35	20.33	20.45	March 7	37.37	34.72	36.54	March 6	43.83	41.90	43.25
March 16	20.54	19.47	19.96	March 14	38.27	34.81	37.09	March 13	45.26	42.82	43.94
March 23	20.48	19.58	20.26	March 21	38.34	36.17	37.43	March 20	44.48	42.05	42.52
March 30	20.65	19.93	20.33	March 28	38.10	36.03	36.59	March 27	43.15	40.94	42.79
April 6	21.59	20.22	21.45	April 4	37.96	36.40	37.55	April 3	44.50	42.22	43.95
April 13	22.53	21.35	22.35	April 11	38.17	36.78	37.14	April 10	44.66	41.54	42.89
April 20	22.33	21.27	22.04	April 18	37.32	35.62	36.02	April 17	44.63	42.35	43.57
April 27	23.54	22.46	23.05	April 25	36.44	33.76	34.51	April 24	44.47	42.01	42.26
May 4	24.15	22.78	24.03	May 2	34.54	31.67	33.03	May 1	42.40	39.46	41.77
May 11	26.07	23.81	25.65	May 9	34.19	32.22	33.14	May 8	42.54	40.97	41.39
May 18	27.05	25.31	26.19	May 16	33.83	32.25	33.28	May 15	41.32	38.79	39.67
May 25	27.50	25.82	26.59	May 23	33.49	31.33	32.54	May 28	41.67	40.47	40.97
June 1	26.88	23.92	24.18	May 29	32.81	31.50	31.87	June 5	40.97	39.59	40.57
June 8	26.16	24.10	25.57	June 6	32.39	31.11	31.49	June 12	41.19	34.38	39.54
June 15	26.24	25.23	25.95	June 13	32.24	31.19	31.69	June 19	39.71	37.79	39.31
June 22	26.24	24.88	25.73	June 20	32.72	31.32	32.42	June 26	39.81	38.55	39.29
June 29	25.85	24.21	24.64	June 27	33.66	32.16	32.98	July 3	40.75	38.27	40.58
July 6	25.14	24.42	24.80	July 4	33.35	32.24	32.84	July 10	42.20	40.83	41.59
July 13	25.20	24.32	24.75	July 11	34.14	32.10	34.02	July 17	43.02	41.53	42.51
July 20	24.86	23.33	23.53	July 18	35.22	33.57	34.92	July 24	43.55	42.18	43.01
July 27	24.43	23.39	23.90	July 25	35.73	34.33	35.14	July 31	43.27	41.55	42.59
August 3	24.95	23.46	24.46	August 1	35.66	33.91	34.23	August 7	42.92	41.87	42.09
August 10	25.44	24.03	24.67	August 8	35.17	33.56	34.73	August 14	43.44	41.76	43.03
August 17	25.74	24.27	25.40	August 15	34.90	33.75	33.99	August 21	43.43	40.89	41.28
August 24	25.83	24.48	25.14	August 22	34.40	32.67	33.04	August 28	41.89	39.58	39.93
August 31	25.56	23.87	24.29	August 29	34.10	32.87	33.69	September 4	40.64	38.27	38.94
September 7	24.90	23.93	24.44	September 5	34.10	33.14	33.63	September 11	38.52	34.93	35.59
September 14	24.76	23.64	23.98	September 12	34.85	33.15	33.84	September 18	37.31	34.19	35.30
September 21	24.50	23.25	23.63	September 19	34.31	33.09	33.89	September 25	35.51	32.04	32.40
September 28	24.55	23.36	23.96	September 26	35.01	33.51	34.22	October 2	34.88	31.98	34.28
October 5	24.33	23.08	23.92	October 3	35.52	33.82	35.30	October 9	34.54	31.62	32.40
October 12	24.89	23.78	24.62	October 10	37.07	35.07	36.61	October 16	32.33	29.19	29.82
October 19	25.40	24.29	25.09	October 17	37.05	35.58	36.28	October 23	31.65	24.45	28.80
October 26	27.27	24.99	27.19	October 24	37.89	36.15	37.23	October 30	32.61	28.14	31.90
November 2	27.84	26.31	27.44	October 31	37.78	36.08	37.34	November 6	31.55	28.80	29.03
November 9	28.71	27.34	27.79	November 7	39.75	36.73	39.11	November 13	30.92	28.33	30.23
November 16	28.96	27.19	28.31	November 14	39.65	37.33	37.72	November 20	30.53	26.92	27.54
November 23	28.96	27.43	27.98	November 21	39.10	37.06	37.72	November 27	28.33	25.79	27.96
November 30	28.62	26.98	27.58	November 28	38.79	36.68	38.38	December 4	29.23	26.99	28.61
December 7	29.00	27.08	28.64	December 5	39.41	37.20	38.97	December 11	29.11	27.50	28.09
December 14	29.44	27.99	28.77	December 12	39.57	37.86	39.02	December 18	28.86	26.97	28.52
December 21	29.79	28.29	29.39	December 19	40.08	38.06	38.43	December 24	29.45	27.97	28.49
December 28	30.11	28.85	29.28	December 26	41.00	37.64	30.62	December 31	28.50	26.41	27.42

Thirty companies whose common stocks make up the average values shown above: Amerada, Atlantic, Barnsdall, Consolidated, Continental, Creole, Gulf, Humble, Imperial, International, Mid-Continent, Ohio Oil, Phillips, Plymouth, Pure Oil, Seaboard Oil, Shell Union, Skelly, Socony, South Penn, Standard of California, Standard of Indiana, Standard of Kentucky, Standard of New Jersey, Standard of Ohio, Sun, Texas Co., Texas Pacific Coal & Oil, Tide Water Associated, and Union Oil Co.

Central Pennsylvania Producers Favor Oil Conservation Law

OIL CITY, Pa., Jan. 24.—Almost at the same time directors of the Central Pennsylvania Oil Producers' Association were voting in favor of an oil conservation law for Pennsylvania at a meeting here, Judge Ralph H. Smith, of Pittsburgh, chairman of Governor Earle's oil industry investigation commission, issued a statement that the temporary injunction granted the Petrol Corp. of Philadelphia "does not stop, hinder or delay the hearing of the oil industry investigation commission scheduled for Philadelphia on February 1."

Twenty-four of the 35 directors of the Central Pennsylvania Oil Producers' Association, representing 700 producers in Venango and adjoining counties, voted in favor of an oil conservation act for Pennsylvania. Only two dissented.

W. J. Brundred, vice president of the association, and E. C. Breene, a director, both of Oil City, were named to prepare such a bill. They will appoint a third member. The board decided that if a proposed special session of the legislature is called they would request the oil conservation measure be brought up for action. Otherwise it will not come up until its next regular session in January, 1938.

Support of the measure was urged by David B. McCalmont, Franklin, president of the association; W. J. Brundred, E. C. Breene and John H. Glass, Oil City, and V. G. Monroe, Pleasantville, all directors. The only opposition was voiced by J. V. Frampton, Oil City.

E. C. Breene said that if the Bradford field is allowed to deplete too rapidly before production in the lower fields can be brought up to meet this production, refiners of Pennsylvania crude will find themselves short of supplies.

Mr. McCalmont doubted that the increase in stocks of Pennsylvania Grade crude were responsible for the slump in prices, as these stocks have risen but 200,000 bbls. in the past year and only 21,000 bbls., or one-half of 1 per cent, since October 1. While the price has declined 45 cents.

The association passed a resolution asking its members to cooperate with the state oil investigation commission, especially emphasizing lifting and depletion costs. J. E. McComb, of Rouseville, a member of the commission, addressed the group.

The directors reelected the following officers: D. B. McCalmont, Franklin, president; W. J. Brundred, Oil City, and W. D. Doyle, Franklin, vice presidents; H. D. Brown, Oil City, secretary, and E. E. Grimm, Franklin, treasurer. J. M. Bloss and J. M. Bailey, of Titusville, were added to the executive committee, replacing J. E. Osborne and George Bayliss, also of Titusville, deceased.

The Dauphin County court granted a temporary injunction Thursday to the Petrol Corp., of Philadelphia, restraining the oil investigation commission from requiring the corporation to submit contracts and other confidential information at the Philadelphia hearing. It set January 25 as the date for the state to show cause why the injunction should not be made permanent.

Judge Smith termed the action "the first attempt at obstructionist tactics" and said that "with this lone exception, the oil companies and officers subpoenaed have indicated their desire to cooperate with the commission." He added that the injunction would not halt the Philadelphia hearing.

Multiple Zone Completion in Wilmington, California, Field

LOS ANGELES, Calif., Jan. 24.—Superior Oil Co. has definitely proved prolific production in the southeastern end of the Harbor section of the Wilmington field by completing No. 1900 Community flowing 450 bbls. daily from the Ranger zone and 3,750 bbls. of 25-gravity oil per day from the Terminal zone at 3,890 feet and is flowing 850,000 feet of gas along with the oil from 1,110 feet of productive formation. The production of this multiple zone completion still increasing.

New Jersey Tanker Named for R. W. Gallagher Launched

The 13,000-ton tanker R. W. Gallagher was launched January 22 for Standard Oil Co. of New Jersey at Sparrows Point, Baltimore, Md. The new tanker is the seventh completed in a construction program started by Standard in 1936. The original program, calling for 10 tankers, has been augmented recently by 12 vessels of the extra high-speed type in which the Maritime Commission will participate.

R. W. Gallagher, vice president, director and member of the executive committee of Standard Oil Co of New Jersey for whom the new tanker is named, was present at the launching. Mrs. Gallagher sponsored the boat. The new tanker was built by Bethlehem Shipbuilding Corp.

Richfield Plans Extensive 1938 Production Development

LOS ANGELES, Calif.—Having completed major adjustments with its reorganization, Richfield Oil Corp. has laid the ground-work for an extensive production development program during the year. The 1938 budget provides for an accelerated rate of production development. It is estimated the company will spend from $2,500,000 to $3,000,000 for acquisition of additional production during the year.

With over 600 new men added to its production department, Richfield has 10 drilling crews in the field compared with 1 a year ago. Of the 10 wells now being drilled, 2 are test wells and 8 are in proven territory. Tentative plans call for the drilling of 60 or more additional wells on proven property during 1938. Two seismograph parties are in the field.

Seismographic Work Planned In Bays on Texas Coast

WASHINGTON, D. C.—The army engineers have granted a permit to the Geophysical Research Corp. to place pipes in Matagorda Bay, Texas, to obtain seismograph readings. Superior Oil Co. was authorized to place temporary pipes for the same purpose in Corpus Christi Bay.

Six Sunday Shutdowns Are Ordered in All Texas Fields

AUSTIN, Tex., Jan. 24.—Texas oil production is being cut an average of more than 200,000 bbls. daily this week as a result of the statewide Sunday shutdown plan put into effect January 23 by the Railroad Commission. Except for a limited number granted special permits, all wells in the state were closed in Sunday for 24 hours. Those authorized to produce are cutting their regular allowable one-seventh. Sunday's shutdown was the first of six ordered.

Based upon the allowable production of January 15 amounting to 1,405,240 bbls., the Sunday shutdown will mean a reduction of 8,431,440 bbls. from the total production for the six weeks. This, however, is the minimum as the allowable production, due to rapid addition of new wells and special increases, constantly is enlarging. Daily allowable usually increases 50,000 bbls. in a month, unless cut by special orders.

As a result of the great number of wells completed, distribution of allowables has reached such a point that 78 per cent of the total production now is on a marginal basis, leaving, as of January 1, only 305,805 bbls. daily of proratable oil to be shared by 45,734 proratable wells.

On January 1, there were 78,385 producing wells in the state, of which 32,651 marginal wells, or 42 per cent of the total, and 45,734 proratable wells, or 58 per cent of the total. Total allowable production was 1,388,575 bbls., but of this 141,241 bbls., or 10.2 per cent, was marginal oil represented by marginal wells, and 941,529 bbls. marginal oil of proratable wells, a total of 1,082,770 bbls. of marginal oil, or 78 per cent of the total, protected by statute against reduction.

Any further reduction of allowables can be taken only from the remaining 305,805 bbls. of proratable oil, in which production 45,734 proratable wells share.

THE MARKETS*

CRUDE OIL: *No changes in posted schedules. Plans to bring about substantial curtailments in February production has brought a better feeling in regard to probable price trends for the immediate future.*

REFINERY: *Cold weather in the northern and eastern states is acting to strengthen the heating oils. Gasoline continues weak as stocks mount. Curtailment in refinery runs in some large refineries and actions taken to reduce crude production is causing better trade sentiment, but prices generally were unchanged. Pennsylvania bright stocks advanced for first time in several months.*

TANK-WAGON AND POSTED DEALER: *Standard Oil Co. (Indiana) advanced tank-wagon kerosene at some subnormal points in its territory. Continental reduced dealer gasoline 2 cents at Pueblo, Colo., and Standard Oil Co. of Nebraska lowered the dealer gasoline price to subnormal at McCook, Nebr.*

FINANCIAL: *Common oil stocks reacted slightly from the levels of the previous week. Average for 30 stocks for week ending January 22: High, 30.52; low, 29.10; close, 29.45. Week ending January 15: High, 31.03; low, 29.31; close, 30.30.*

**Detailed information in market section.*

OBITUARIES

DR. PONTUS HILFRID CONRADSON, 86, widely known in the chemistry of petroleum, died at his home in Franklin, Pa., January 21. Doctor Conradson, who was born in Sweden, had wide experience in manufacture and utilization of lubricating oils. From 1896 to 1921 he was chief of the bureau of tests and lubrication for Galena Signal Oil Co. and served that company for 10 years in a consulting capacity. Included in his experimental work was the "Conradson Carbon Residue Apparatus and Method," adopted as standard by the American Society for Testing Materials.

OTIS R. LANG, 57, well known drilling contractor in Montana and Alberta, was fatally crushed while loading casing at Range Oil & Gas Co. No. 3 on the Rogers-Imperial structure east of Coutts.

ZEKE LOHMAN, 49, driller of oil wells since 1925, and former big league baseball player, died at Flora, Ill., January 18. In 1925 he drilled his own oil leases at El Dorado, Ark., and then worked for Standard Oil of Louisiana, Gulf Oil Corp. and Benedum & Trees.

E. C. MULLENDORE, Cleveland, Okla., died January 18. He was a native of Indiana. When the Cleveland oil strike occurred in 1903 he became interested in oil. He was a partner in the Mulberry Oil Co. which has holdings in Texas and was interested in many Oklahoma oil operations.

BEVERLY TUCKER THOMPSON, 72, who was connected with the Standard Oil Co. in Kansas City, Mo., until he was transferred to Chicago in 1896, died at St. Petersburg, Fla., January 19. He was born in Arrow Rock, Mo., and began working for an oil company in 1884. He retired four years ago.

JOHN MUIR, 52, geologist and authority on foreign oil fields, died in Sydney, Australia, last week. He was engaged in geological work for Socony-Vacuum Oil Co. and subsidiaries of Standard Oil Co. of New Jersey in Australia, the Far East and Papua at the time of his death. He had also served in Mexico and Iran, and was the author of "Geology of the Mexican Oil Fields."

Motion For New Trial Is Filed Following Verdict at Madison

By R. B. PYRE

MADISON, Wis., Jan. 25.—Defense attorneys were busy today on revised general motions for a new trial and to set aside the verdict of the federal jury which Saturday found 16 oil companies and 30 officials guilty of conspiracy to fix gasoline prices.

The first of the motions were filed Monday on behalf of Pure Oil Co. and three of its officers—Henry M. Dawes, C. B. Watson and R. H. McElroy, Jr. The grounds cited were that there was no competent evidence that the defendants engaged in any conspiracy or committed any illegal act in this district; that there was a fatal variance between the indictment's allegations and the proof; that the jury in determining its verdict improperly considered matters not in evidence, and that the court erroneously stated the law in his charge to the jury.

Sentence Deferred

Pronouncement of sentence by Judge Patrick T. Stone will be deferred until the arguments have been presented. The offense of which the defendants were convicted in a blanket verdict is classed as a misdemeanor rather than a felony which would call for incarceration in a federal penitentiary. It involves a potential maximum fine of $5,000 for each corporation and a $5,000 fine or a year in jail or both as the maximum for each individual.

The jury received the case at 1:33 p.m., January 21, and was ready to report at 9:30 a.m. after deliberating until 11:30 p.m. Friday and resuming its consideration shortly after 8 a.m. the next day. Hiram Nelson, foreman, a retired public utility manager from Stoughton, Wis., indicated the jurors "kept no track" of the ballots taken, but said there were "not many."

Members of counsel declined comment, and defendants here did similarly on their advice. E. G. Seubert, president of the Standard Oil Co. (Indiana), was quoted, in Chicago, as predicting the verdict would be "corrected" by the court after arguments on motions, or on appeal.

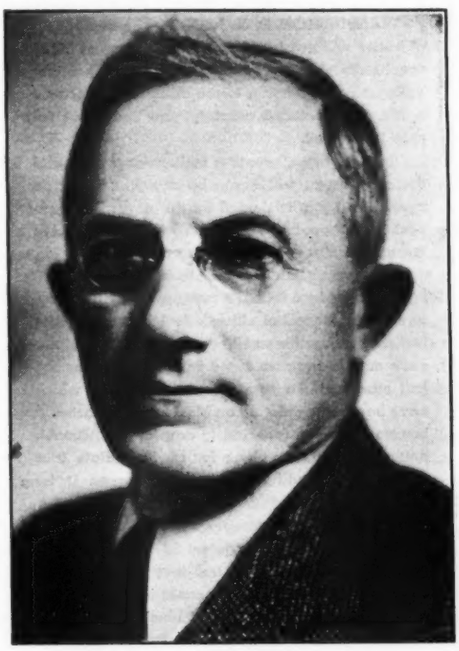
Presentation of evidence and arguments, which opened October 4, consumed 16 weeks.

It grew out of an investigation, announced in April, 1936, by Attorney General Homer S. Cummings, who reported complaints from jobbers and brokers that major companies were "squeezing them" out of business.

Choice of Madison

A grand jury was called in Madison. Just why this city was chosen never was explained, except that some complaints came from Wisconsin and that this city was approximately in the center of the 10 middle western states known as Standard of Indiana territory, where the government claims an illegal conspiracy was carried on beginning in February and March, 1935, and continuing until the investigation started—a period of about 14 months. One indictment was returned July 28, 1936, charging 58 individuals, 24 oil companies and three trade publishing companies with conspiracy to raise tankcar prices of gasoline arbitrarily and fixing them at an artificially and noncompetitive high level. Another, on November 6, charged approximately the same group, though omitting the journals and some individuals with combining to restrict the margins of jobbers by means of uniform contracts. The legality of both indictments was questioned, and duplicate bills were returned by another grand jury on December 22, 1936.

The new "price-fixing" indictment, alleging violation of the antitrust act, which forbids concerted action to influence prices, subject to certain qualifications in Supreme Court decisions as to "reasonableness," included only 56 individuals instead of 58, and this is the case that went to trial. The other indictment is still pending, and while the government indicated recently it would bring it to trial about April 1, regardless of the outcome of the "price-fixing" indictment, it is not believed preparations can be completed before late summer or early fall.



CLYDE M. BOGGS

President of Kanotex Refining Co. and president of Western Petroleum Refiners Association, one of the defendants in whose case Judge Stone directed a verdict of acquittal.

Many of the defendants brought to trial were members of the Planning and Coordination Committee under the petroleum code during NRA, and others were members of subcommittees working under the code, but the indictment charged them as executives and employes of major companies with participating in an unlawful program for purchase of "distress" gasoline at progressively increased prices as a means of "rigging" the tankcar spot market.

One purpose alleged in the indictment was to "extract large sums of money" from 4,000 jobbers in the 10 states by "squeezing" them on a rising market so they could not avail themselves of their full 5½-cent margins. The theory was that the uniform contracts of jobbers supplied by the major companies were based upon a selling price representing the average between the high and low quotations for third grade gasoline as published in the Chicago Journal of Commerce, Platt's Oilgram, and in some instances by the National Petroleum News. The prices so quoted by the journals were those paid by independent jobbers on the tankcar spot market. To realize more money on these contracts, the government charged defendants conspired to control the spot market by purchasing all surplus of independent refiners on the spot market at prices progressively increased over those paid by independent jobbers, brokers, and direct consumers.

To effect their purpose, the government claims defendants induced the publications as co-conspirators to publish the "artificially high" prices they paid as bona fide prices charged by independent refiners to these other customers. At the close of its case the prosecution admitted its evidence was insufficient to convict the journals, and moved their dismissal, but the government continued to insist that, innocent or not, they were the chief instrumentalities of the conspiracy.

The Indictment

The indictment charged the defendants "allotted" among themselves the surplus gasoline of 14 "co-conspirator" independents in the Mid-Continent field and 22 in East Texas. The indicted companies controlled 85 per cent of all production in this field, and gasoline sold on a spot basis amounted to less than 5 per cent of all gasoline marketed in this territory, it was claimed. It was necessary, therefore to buy only a small fraction of all the available supply to enable the majors to control the price, the government contended.

It charged Charles E. Arnott, vice president of Socony-Vacuum Oil Co., Inc., was the "master mind" of the plan and that Walter P. Jacobi, Tulsa, buyer for Wadhams Oil Co., and Neil Buckley, Tulsa, "loaned" by Cities Service Export Co., acted as "liaison men" in the Mid-Continent and East Texas fields, respectively.

The government claimed the buying programs caused an increase in the tankcar price from about 3⅛ cents a gallon to approximately 5¾ cents in March, April and May, 1935, and kept it at that level the remainder of the year until an increase in crude prices, also allegedly engineered by defendants without reason in the "dead of winter," was followed by another half-cent rise.

Periodical meetings were alleged to have been held by a committee consisting of R. W. McDowell, vice president of Mid-Continent Petroleum Corp., Jacobi and O. J. Tuttle, Tulsa, tankcar sales manager of Empire Oil & Refining Co., to allot purchases in the Mid-Continent market with the aid of A. V. Bourque, secretary of the Western Petro-

leum Refiners Association, and to "agree" upon a noncompetitive price to be paid by all purchasers.

None of the independent companies named as "dancing partners" of the majors was indicted, and the only individual independent refiner among the defendants was C. M. Boggs, Arkansas City, Kans., president of the refiners association and of Kanotex Refining Co. He was among those dismissed at the end of the trial. The defense charged the government "didn't dare" to indict the independent companies named as "co-conspirators" because it would destroy their chances of proving the "conspiracy" was perpetrated by "gigantic interests."

At the time the government claims the conspiracy began, the petroleum code was in effect, and the defense sought to establish that the buying program was a voluntary and cooperative stabilization plan to halt price wars, to give small refiners an orderly market and save the industry from ruin threatened by "hot" oil flowing out of East Texas at demoralizing prices.

Narrowed Issue

From the outset, the government battled to limit the issue to a single question: "Did the defendants combine to influence the tankcar price?" If they did, the prosecution claimed, they were guilty under the Sherman act, regardless of their purpose, and no matter whether the price fixed was reasonable, taking their doctrine from the supreme court decision in the Trenton Potteries case which eliminated the "rule of reason" where absolute control of a market is shown. The defense sought to show the action was "reasonable" under the theory of the Appalachian coal decision which reapplied the "rule of reason" where coal operators did not completely control the market and were unable, the Supreme Court held, to influence anything more than a "fair going market price." And this, they claimed, was all the majors paid to their "dancing partners," each purchaser determining what was the fair price under current published quotations and buying only such gasoline as it actually needed.

At the outset Judge Patrick T. Stone held with the government that before the defense could represent this program as an authorized code activity, it must show written approval from the president or the secretary of the interior.

Ickes' Letter

The most controversial piece of defense evidence was a letter, written on July 20, 1934, by Secretary Harold L. Ickes to Mr. Arnott, delegating him to organize committees, hold public meetings to "ascertain the elements of conflict," and by "cooperative effort" to stabilize the gasoline market as a means of halting middlewestern price wars which threatened the purposes of the recovery act.

In its first test the court held the letter authorized Arnott to deal only with retail prices and not to engage in a buying program.

The defense contended its purpose, rather than to prove immunity, was to show "good faith" in carrying out a "lawful" program which did not require formal approval within the meaning of the recovery act. Toward the end of the trial the government withdrew its objection and the letter came into evidence.

The court, however, while considering a legal opinion by Louis Titus, attorney for the Planning and Coordination Committee under the code, who held that the letter gave Arnott protection for "all reasonable activities" and declared it was unthinkable the government ever would prosecute him for something it had asked him to do, in the end barred out the opinion while admitting the letter.

In the earlier stages of the defense also the court sustained government objections to descriptions of buying programs sponsored by the government in 1934, but later permitted them to come in, while Arnott was on the stand. Similarly, Judge Stone for a time excluded testimony as to "why" the price of crude oil was maintained constantly at $1 a barrel throughout 1935, but later permitted J. E. Shatford, former chairman of the P and C committee, to testify it was maintained at $1 upon insistence of Secretary Ickes.

The 1934 buying programs, the jury learned through Arnott, provided for specific quotas of surplus gasoline to be purchased regularly by all major companies according to their size, at prices above the market. It was shown in arguments but not in evidence that these programs had been ineffective because there was no effective means at that time of controlling production and many independents took advantage of the situation not only to sell all their surplus but to produce more.

The government claimed Secretary Ickes, in a speech at Dallas in November, 1934, acknowledged the illegality of these programs and said there would be no more of them, but that the major companies "went right ahead" in 1935, while concealing the true details of their program.

The defense insisted the plan was reported to the Petroleum Administration Board by Arnott, and that he was "not told to stop."

WASHINGTON VIEW

WASHINGTON, D. C., Jan. 24.—The department of justice will await action by Judge Stone at Madison before charting its action regarding pending antitrust cases relating to the oil industry because seven of its antitrust attorneys are tied up in the case just closed.

If Judge Stone grants a motion for a new trial these attorneys will again be occupied with this case, but if this is denied as the government expects, an appeal will be taken which will involve the attention of several of these men.

The second Madison indictment, charging conspiracy to reduce jobber's margins, is pending before Judge Stone but officials feel he may not be inclined to handle another case of this kind for some months because of the time consumed by the last case and the pressure of other cases which have been accumulating on his docket. Department has no present disposition to drop this indictment, neither has it any plans for an immediate trial and probably will make no decision on it for some time.

Same factors will largely influence decision on handling of indictment against 10 individuals not brought to trial. Officials feel they probably will have to go ahead with these cases and eventually try at least some of them but declared the case against each individual will be considered on its own merits.

Department's investigation on East Coast, involving virtually same charges as Madison case, is rather inactive because attorneys have been busy at Madison, but investigators are still collecting some evidence. Officials indicated some action looking toward bringing an indictment might be taken soon but would depend largely on developments at Madison.

The West Coast investigation is much more active, as three attorneys and several investigators have been there for several weeks examining the books of eight major companies suspected of violating the 1930 consent decree. This case is not tied in with Madison developments but officials would make no prediction when action might be expected beyond stating that the investigation is not yet completed.

Pleadings have been filed in the Ethyl Gasoline Corp. case in New York but government has asked that trial be held off until March because it is in charge of Attorneys Chaffetz and Lewin who have been at Madison.

In its presentation of the case, the government introduced in evidence numerous letters and telegrams exchanged between officials of defendant companies, taken from their files which were brought to Madison on subpoena, many of which referred to the buying program and the coincident advances of tankcar prices. The government announced its chief reliance was upon these letters as disclosing "the truth."

Beroth's Testimony

One of its first witnesses was Carl O. Beroth, Chicago broker, who claimed he was unable to purchase gasoline in the Mid-Continent field during the alleged conspiracy because independent refiners said they were selling large quantities to major companies and "had none for us." The defense produced evidence to show these refiners had sold to other brokers far in excess of the quantities bought by defendants and charged that Beroth as a dealer in "hot" gasoline was one of the complainants who instigated the prosecution.

The defense produced also voluminous testimony in an effort to prove the defendant companies did not control the quantity of production claimed by the prosecution and hence did not have power to control prices. It placed expert witnesses on the stand to testify it would be impossible for the indicted companies to maintain an artificially high level of prices.

It sought to show that gasoline prices, before the rise in 1935, had fallen an equivalent amount in 1934, and that the buying program was undertaken only at the insistence of independents who threatened to cut the price of crude because they could not recover enough money to pay for it under the going price of gasoline in early 1935.

The prosecution contended the alleged "conspirators" did not place their plan in operation until the Connally "hot" oil act was passed in February, 1935, because they did not wish to buy any more gasoline than necessary, and because their alleged plan to "rig the market" would not succeed unless the flow of "hot" gasoline was checked.

The defense claimed the buying program was only an incidental factor in the rise of tankcar prices and that the chief contributing elements were the Connally act, refinery allocations under the code limiting production at the insistence of the administration and forcing the major companies to purchase part of their supplies; an unexpected and unprecedented increase in consumption beginning in March, 1935; control of inventory withdrawals by the oil administrator; improvement of economic conditions generally; and the maintained price of $1 crude.

Judge Stone's Instructions

The case went to the jury shortly after noon Friday, January 21, at the end of the 110th day, with instructions from Judge Stone that to return a verdict of guilty the jurors must find the defendants had the power to control prices, but that if they did so find, and that the defendants combined to exercise that power, they should be found guilty.

The court also instructed the jury as a matter of law "that there is no evidence in this case of government approval which would exempt the activities complained of from the prohibition of the Sherman act."

The instructions concerning "power to control the market" were interpreted as leaving the jury to decide whether or not the facts fit the Trenton Potteries or Appalachian Coal decision.

The antitrust law does not prevent individuals or corporations from acting together, provided their joint action is for a lawful purpose, the court explained.

He also informed the jurors that each defend-

(Continued on Page 226)

Technical Men to Be Heard at Next Governors' Conference

By T. F. SMILEY

HOT SPRINGS, Ark., Jan. 25.—"I am gratified with what we have accomplished," said Governor E. W. Marland, of Oklahoma, following the close this afternoon of the two-day conference of governors of oil-producing states, in the Eastman hotel here. "Serious conditions were brought to light, and we have laid the foundation for important remedial work. The men who attended the conference will go back to their respective states with an awakened realization of how tremendously important it is that we conserve our present petroleum resources and add to them.

"Although we did not deal directly with the question of crude prices, there is no escape from the conclusion that in order to acquire new reserves the prospector must be encouraged to find them. Prices that fail to meet the costs of finding and producing won't do that.

"But we have started the states thinking. Lethargy and misunderstanding are our enemies. Ignorance of true conditions is the thing we fear. The public impression is that we have enough oil proven to meet consumption demands 10 years. On the contrary the opinion of this conference was unanimous that the present known supply can't meet demand four years.

"By 1942 the oil obtained from all the present drilled reserves. all the present known reserves not yet drilled, and all the new reserves expected to be discovered in 1938, 1939, 1940 and 1941 will be needed to meet the demand for that year."

There was virtual agreement on this projected situation among the men attending the conference, sponsored by Governor Marland. There were differences of opinion as to what sort of situation would prevail after 1942, but there was pretty general concurrence in the view that production would decline. Diversity of ideas prevailed regarding the course of demand. The extreme importance of conservation was accepted by everybody.

Meet Next September

It is planned to have a similar conference next September to which technical men of the oil industry will be invited. They will not be asked to take any part in the conference which might embarrass them or the companies with which they are associated, but they will be asked to contribute information to aid the governors in reaching conclusions concerning measures demanded to conserve the country's oil resources and stimulate search for new fields.

The sessions were informal. No organization was effected, and Governor Marland usually occupied a chair on the floor, guiding the discussions and endeavoring to bring out opinions of others. No resolutions were adopted and no form of statement was formulated. It is expected, that the September conference, the time and place for which are to be announced later, will see an organization formed and a fairly definite program set up. Particular effort will be directed toward gaining uniform conservation laws.

Future demand for petroleum in the United States and ability to meet it were the principal subjects of discussion. Serving as a basis for expressions of opinion was a voluminous report, with charts, prepared by Alex W. McCoy, consulting geologist, of Ponca City, Okla. In addition were five large charts in colors on the wall back of the speakers "platform." The invitations extended by Governor Marland had indicated the question of fixing crude prices by action of the several states would be a central topic. It received little more than casual mention.

The McCoy report estimated $1.11 as the average total cost between 1924 and 1938 of delivering 1 bbl. of oil to a pipe line and $1.89 as the cost during the next 20-year period.

"I don't believe the necessary oil can be found at anything like the price arrived at by McCoy," declared Governor Marland.

In this connection Russell B. Brown of the Independent Petroleum Association of America, offered statistics to show immense volumes of crude had been produced at average costs in excess of average sales value. In Oklahoma an average of 100 per cent of the state's production cost more than the sale price in 1931 and again in 1934. This does not mean all the oil was sold at a loss, but so much of it went for prices far below cost of production that it brought the average to 100 per cent. Similar conditions have prevailed in other areas in different years.

Dr. M. M. Leighton, chief of the Illinois Geological Survey, drew attention to the fact that widening introduction of the diesel engine, hydrogenation of coal, and extraction of oil from shale might have a marked influence on the future of oil production. He questioned the accuracy of the McCoy estimate of demand after 1942.

Rising Demand

Indicative of the fast rising demand, I. G. Harmon, of the Oklahoma tax commission, pointed out that from the time of the Drake well to 1901 the nation used 1,000,000,000 bbls. of oil. It uses that much every year now.

Besides Governor Marland, two governors appeared, Governor C. E. Bailey, Arkansas, and Governor Clyde Tingley, New Mexico. Governor Bailey, just out of a hospital, left soon after welcoming the visitors. "I'm here to look and listen," smiled Governor Tingley. "I have one more year to serve, and in that year I shall do all I can for future generations, including cooperation in this movement for conservation of oil."

Others who came as representatives of governors or as observers were: New Mexico—Everett H. Grantham, United States district attorney; John Miles, democratic state chairman; Frank Worden, state land commissioner; G. D. Macy, consulting engineer oil conservation commission. Utah—Burton W. Musser, representing the governor. Illinois—Doctor Leighton; Alexander Wilson, administrative assistant to the governor; Dewitt Billman, secretary legislative reference bureau. West Virginia—Dr. Paul H. Price, state geologist. Oklahoma—C. C. Brown, tax commissioner; I. G. Harmon, assistant to tax commissioner; Tom Anglin, former state senator. Louisiana—William G. Rankin, state conservation commissioner; W. F. Chisholm, engineer. Arkansas—J. D. Reynolds, member conservation board. E. B. Swanson, Washington, associate director of the petroleum conservation division at the request of President Roosevelt, in response to Governor Marland's invitation. Russell B. Brown, general counsel for the Independent Petroleum Association of America, was also here on invitation. Texas was not represented.

Texas Rodessa Allowable Increased 18,000 Bbls.

AUSTIN, Texas, Jan. 25.—Allowable daily oil production in Texas was boosted more than 20,000 bbls. in orders made public today by the railroad commission.

The Rodessa allowable was raised from 16,681 to 34,850 bbls. daily. Commission officials said the purpose of the change was to give the Texas part of the field parity with the Louisiana and Arkansas sections.

February 14 Set for Hearing on Miller County Allowable

LITTLE ROCK, Ark., Jan. 25.—Chancellor A. P. Steel of Arkansas has set February 14 for hearing an injunction suit brought by three Miller County oil operators to prevent the State Conservation Board from limiting production in the local field.

William Monroe Layton, Jess King and John A. Terry obtained a temporary injunction Saturday preventing the board from enforcing daily allowables on their wells. The board met at El Dorado January 25 and asked Attorney General Jack Holt to represent it.

McPherson, Kansas, Chapter of A.P.I. Meeting Next Week

A meeting of the McPherson, Kansas, Chapter of the A.P.I. Division of Production will be held on February 3, at 7:30 P. M. in the Community building at McPherson, Kansas. D. O. Barrett, Chase, Kansas, chief engineer for Gulf Oil Corp. will have charge. He will discuss and illustrate methods of installing and operating many types of oilfield equipment. There will be several exhibits of oilfield equipment. This will not be a technical program but of particular interest to oilfield workers as well as general interest.

Petroleum Tax Exception in Anglo-American Treaty

WASHINGTON, D. C., July 24.—Petroleum import taxes may be lifted from sales for ships stores in connection with the proposed reciprocal trade agreement with England, the State Department revealed today in issuing a supplemental list of commodities which may be included in the agreement. The new list includes fuel oil, gasoline, lubricating oil and other petroleum products subject to import taxes for possible removal of the tax when such articles are sold for use on war vessels of the United States and other nations and vessels engaged in fisheries, foreign trade, trade between Atlantic and Pacific ports, or United States possessions.

Natural Gasoline

Texas Natural Gasoline Plants Affected by Shutdown Order

AUSTIN, Tex. — In connection with the general shutdown order of oil wells in Texas on January 23 and on the next five following Sundays the report of the railroad commission stated in regard to natural gasoline plants that:

"The commission finds that there are now 137 natural gasoline plants operating in the state of Texas processing gas received from the following sources: Oil wells, sour gas wells, sweet gas wells, stock tank vapors, and refinery vapors. After this gas has been processed for its gasoline content, its disposition is accounted for in the following manner: (1) Extraction loss; (2) return to leases; (3) plant use; (4) drilling; (5) pipe line; (6) carbon black; (7) gas-lift; (8) repressure; and (9) vented to the air.

"The commission finds that there will be a need in some cases for a certain portion of the residue gas, originating from oil wells, from these gasoline plants to supply domestic fuel and heat to the families making their homes on oil and gas leases in the various oil fields in the state of Texas, to supply enough gas to the 41 carbon black plants to prevent damage to the equipment, and that in supplying the two aforementioned needs there will be of necessity a certain amount of gas used in the gasoline plants for plant fuel and loss due to the extraction of natural gasoline. There will be no need for gas for drilling fuel, gas-lift operations, and repressure operations. There certainly will be no reason for any gas to be vented to the air. Of the gas returned to leases, all demand supplied by gas originating from oil wells should be excluded with the exception of the true domestic demand.

"The commission finds that while a majority of the natural gasoline plants operating in the state of Texas are supplied sufficient gas from sour gas wells, sweet gas wells, tank batteries, and refineires to meet the necessary requirements as outlined above, there are some plants who depend upon gas produced from oil wells only. . . . .

"It is ordered that where a natural gasoline plant finds it necessary to process gas from oil wells in order to supply its domestic demand for residue gas, enough gas to prevent damage to the carbon black plants to which it is connected, that the plant shall be allowed to do so with the understanding, however, that the gas volume so processed shall be kept at a minimum to supply those requirements, and in no case shall any gas whatsoever be vented to the air.

"The natural gasoline extraction plants be and hereby are given authority to advise the operators of the oil wells connected to their gathering systems that it will be agreeable for those operators of oil wells to produce their allowed oil on each of the days covered by this shutdown order, with the understanding, however, that operators of oil wells so producing curtail one day's production during the following week.

"Each operator of a natural gasoline plant within the state of Texas shall file with the commission's deputy supervisor of the district in which the plant or plants are located, a natural gasoline plant report —Form EH 4—covering the operation of the plant or plants for each Sunday, the report to be made not later than the Tuesday following each Sunday, and shall show thereon the wells producing, as well as all other detail called for on this report."

Bottled Gas Association Adopts New Name at New York Meeting

NEW YORK. — At a meeting of members of the National Bottled Gas Association held recently in New York the association voted to change its name to Liquefied Petroleum Gas Association, and adopted appropriate revision of its constitution and by-laws, consistent with the change in name.

The association will hold its first meeting, which will be the postponed annual convention of the former society, at St. Louis, Mo., on March 21 and 22, 1938. At that meeting officers will be elected and an executive board chosen for the current year. The executive board composed of 16 directors will consist of six directors representing producers of liquefied petroleum gases, six directors representing companies engaged in the assembling and marketing of complete utilization systems or reselling liquefied petroleum gases, or both; one director representing gas cylinder manufacturers; one director representing tank manufacturers; one director representing manufacturers of utilization equipment; and one director representing manufacturers of consuming appliances.

Officers of the Liquefied Petroleum Gas Association are W. F. Verkamp, president, F. B. Boice, vice president, A. N. Kerr, vice president, and F. R. Fetherston, secretary and treasurer. Headquarters are located at 11 West Forty-second Street, New York City.

Refinery Projects

Sun Oil Announces $11,000,000 Expansion Program for 1938

PHILADELPHIA, Pa.—A program of plant expansion and development, involving capital expenditures of $11,000,000 during 1938 has been announced by the Sun Oil Co., following its adoption by the board of directors. The work will be directed to expansion and improvements in the company's two chief refineries, at Marcus Hook, Pa., and Toledo, Ohio. The building program aims not only to increase the capacity of present plants, but to adapt them to important new refining processes. These new processes will make possible larger recoveries and improved quality of the most valuable elements from crude oil; and at the same time will reduce the cost of refining. In announcing the year's program, J. Howard Pew, president of the company, said:

"Work will be started on these improvements within the next few weeks. In as much as the materials to be used must be produced and fabricated especially for our purposes, it means that practically the entire expenditure will go into wages for labor. About 2,000,000 man-hours of labor will be required in the erection of plant and structures in addition to employment in producing the materials.

"The fact that the company is entering upon this expansion program at this time is evidence of our confidence in the basic soundness and permanence of the American competitive system of economics and our institutions of democratic government, notwithstanding certain temporary political trends which if long continued would inevitably lead to industrial disaster. Business and industry are the real sources of employment and guarantors of prosperity. We believe there should be no interruption of the continuous modernization and improvement of plants, equipment and technical processes. Only through such progress is it possible to reduce the consumer's prices for our products, to increase wages, expand employment and raise the standard of living. Confident that the sound judgment of the American people is and will continue in accord with these principles, the company has approved for 1938 one of the largest budgets of capital expenditures that it has ever adopted."

Gas & Oil Products to Enlarge Capacity of Hartell Plant

CALGARY, Alberta. — Gas & Oil Products, Ltd., headed by A. H. Mayland, is planning to double the capacity of its Hartell, Alberta, skimming plant in the near future. Present capacity of the plant is 500 bbls. daily. The company is also considering the construction of a 1,000-bbl. skimming plant in the South Turner Valley fields.

Colonial Beacon Erecting Large Combination Unit

BOSTON, Mass.—Construction of a 30,000-bbl. combination unit is now under way at the Colonial Beacon Oil Co., Inc., refinery at Everett, Mass., as part of a plant enlargement program. Other work now under way is the modernization of the plant's treating system. The refinery's crude capacity will be more than doubled through installation of the new unit, present crude capacity being 24,000 bbls. daily. Cracking capacity of the plant is 19,000 bbls. daily.

Richfield Awarded Government Contract in Arizona

LOS ANGELES, Calif.—The United States government has contracted to use Richfield Oil Corp. gasoline exclusively for all requirements purchased through the Procurement Division in every county in Arizona except Yuma County. Requirements supplied through this division include practically all departments of government activity with the exception of the Army and Navy. The contract provides for delivery of approximately 500,000 gallons of gasoline and kerosene at an estimated cost of roughly $90,000. Richfield did not extend its business into Arizona until after its reorganization in March of last year.

Illinois-Indiana Petroleum Association Annual Meeting

Keen interest was taken in the annual meeting of the Illinois-Indiana Petroleum Association, in Robinson, Illinois, with William Bell, president. The membership elected to the board of directors for 1938, Tyler Andrews, P. E. Taggert, William Bell, F. W. Freeborne, T. B. Steele, R. W. McIlvain, Jr., J. T. Cumble, Rex Dawson, C. C. Carroll, William S. Corwin, A. T. Lager, Frederick Grumme, John Russell, Frank B. Barnes, Alex U. McCandless, and A. E. Baldwin. The board elected William Bell, president; J. T. Cumble, first vice president; A. F. Lager, second vice president; R. W. McIlvain, Jr., secretary; T. B. Steele, treasurer, and Lee Mulvihill, executive secretary. The elective officers with C. C. Carroll and Alex U. McCandless were named to the executive committee.

Michigan Severance Tax Led by Buckeye Township

SAGINAW, Mich.—Michigan severance tax collections on oil and gas production during November showed a total of $41,622, according to the State Tax Commission, which reports the figure $5,469 below that for October, but more than double the total for the previous November. The state retains 40 per cent, distributes a like amount to the producing townships and apportions the remaining 20 per cent among the counties having production.

Buckeye Township of Gladwin County led the list, with $7,362 as its share. The smallest payment was 12 cents to Hatton Township, Clare County. The tax is 2 per cent on the value of all oil and gas at the well head.

I.P.A.A. 1938 Convention to Be Held in Tulsa in October

The 1938 convention of the Independent Petroleum Association of America will be held about the middle of October in Tulsa.

Magnetic Storms

Tucson, Ariz. observatory of the U. S. Coast and Geodetic Survey reports moderate magnetic storm began at 11 a.m. January 12 and ended at 4 p.m. January 13, central time. Also a second severe magnetic storm began at 4 p.m. January 16 and ended gradually at 2 p.m. on January 19, central time. A third severe storm began at 11 a.m. January 20 and lasted until 5 p.m. January 22, central time.

Tulsa Petroleum Accountants

The January meeting of the Tulsa Petroleum Accountants Society will be held Friday, January 28, in the Winter Garden room of the Hotel Mayo. Dinner will be served at 6 p.m. The speaker will be Robert D. Hudson, formerly district court judge, on "The Constitution of the United States."

Natural Gas News

Texas Railroad Commission Shutdown and Gas Lines

AUSTIN, Tex.—In its order shutting down all oil wells in Texas for Sundays the Texas Railroad Commission says:

"It is further ordered, that where a natural gas pipe line finds it absolutely necessary to supply their light and fuel customers with gas from oil wells, that these natural gas pipe line companies be and hereby are given authority to advise the operators of the oil wells connected to their gathering systems that it will be agreeable for those operators of oil wells to produce their allowed oil on each of the days covered by this shutdown order, with the understanding, however, that operators of oil wells so producing curtail one day's production during the following week.

"It is further ordered, that each operator of a natural gas pipe line within the state of Texas using gas produced from oil wells on any and all of the days covered by this shutdown order shall file with the commission's deputy supervisor of the district in which the gas was taken a natural gas report—Form 3-266—covering the amount of gas taken and the wells taken from for each Sunday, the report to be made not later than the Tuesday following each Sunday, and shall show thereon all detail called for on this report."

Pacific Coast Gas Companies Report New Sales Records

LOS ANGELES, Calif.—Pacific Coast gas companies' sales for 1937, exclusive of December, indicated that final reports for the year would show new records in volume and revenues.

The 26 companies serving California, Oregon, Washington, British Columbia, Arizona and Nevada piped 186,156,876,000 feet of gas into homes, factories and offices during the 11 months—a gain of 9.2 per cent over the like 1936 months. The revenue was $83,434,258, a gain of 10.9 per cent.

Biggest gain in volume was in household sales, where the increase was 20.8 per cent. The 1,736,784 householders took a volume of 67,507,131,000 feet and paid $57,258,525 for it.

Industrial and commercial users took 104,395,378,000 feet, an increase of 8.7 per cent. Revenues were $24,137,416, up 12 per cent. Consumers totaled 1,823,400—a new high, up 3.5 per cent for the year.

California sales for the 11 months totaled 168,459,344,000 feet, bringing revenues of $73,514,390. Volume was up 7.1 per cent and revenues up 10.6 per cent.

No Sales of Helium Permitted Until Preliminaries Completed

WASHINGTON, D. C.—Secretary Ickes announced that President Roosevelt had approved interior department regulations prohibiting sale of helium until after the government had acquired new supplies of the noninflammable gas used for inflation of lighter-than-air craft.

In announcing the president's approval of the regulation, Mr. Ickes said orders for helium cannot be accepted until an agreement has been executed providing for the sale to the government of privately-owned helium properties near Dexter, Kans., and Thatcher, Colo.

Secretary Ickes revealed that informal inquiries made to the Bureau of Mines indicate that America Zeppelin Transport Co. Inc., American agents of the German Zeppelin Transport Co. will require 14,000,000 cubic feet of helium to be exported to Germany for the initial inflation and makeup for the LZ-130, the airship now nearing completion in Germany, and that an additional 3,900,000 feet will be required for makeup in this country in connection with the 15 or more trans-Atlantic flights planned for the spring, summer and fall of this year.

The regulations prepared by the department of the interior provide specifications for helium to be sold to commercial interests and stipulate that prices shall be based upon actual production costs, with due allowance for depreciation and other items. Secretary Ickes said W. F. Brennan, an accountant of the department, is at the helium plant at Amarillo, Texas, to make an exact determination of production costs, the data to be used by the government in determining the price to be charged to private consumers.

The plant at Amarillo has an annual production capacity of 24,000,000 feet. It is anticipated the increased demand due to the needs of private interests will require operation of the plant at full capacity. Actual applications for the sale of helium are not yet being considered by the bureau, as definite action on requests can not be taken until regulations for sale have been approved.

R. A. Cattell, chief engineer of the petroleum and natural gas division, Bureau of Mines, is in direct charge of the government's helium production operations. C. W. Seibel is supervising engineer in charge of the Amarillo plant which was built at a cost of about $800,000 and is designed for a rated capacity of 24,000,000 feet per year.

The government owns virtually all of the important known helium reserves except for scattered small fields. The most important reserve of helium-bearing gas ever discovered is the Cliffside structure. After a survey extending over many years, the government purchased the gas mineral rights in fee in 50,000 acres comprising this structure. This reserve is conservatively estimated to contain over 100,000,000,000 feet of natural gas containing 1.8 per cent helium, indicating a reserve of helium in the ground of 1,800,000,000 feet.

In addition, the president has set aside two helium reserves in Utah from the public lands which, although much smaller than the Cliffside reserve, are important. These are being held for emergency use.

The Bureau of Mines estimates that the present demands of the army and navy for helium will be approximately 5,000,000 feet annually. The demands of private consumers will increase this figure so that it will be necessary to augment considerably the force of operatives at the Amarillo plant. Some of the increased demand for helium will be due to the use of gas in the treatment of respiratory diseases. Helium has been found to be beneficial in the treatment of asthma and other diseases of this type.

United Gas and Fuel Buys Dominion Hamilton System

HAMILTON, Ontario.—Arrangements have been made for the purchase by United Gas & Fuel Co., local subsidiary of Union Gas Co. of Canada, Ltd., of the franchise and distributing system of Dominion Natural Gas Co. in and adjacent to Hamilton.

United Gas & Fuel Co. produces and distributes manufactured gas in the larger part of Hamilton. Dominion Natural Gas Co. originally secured a natural gas franchise for Barton Township, a portion of which was subsequently annexed to the city; with the result both companies were able to distribute in this area.

Under the agreement, areas now receiving natural gas will continue with the same product, and there will be no change in the rate of either natural or manufactured gas. The value of the Dominion franchise and distributing system is estimated at about $1,000,000.

Pipe Line Activity

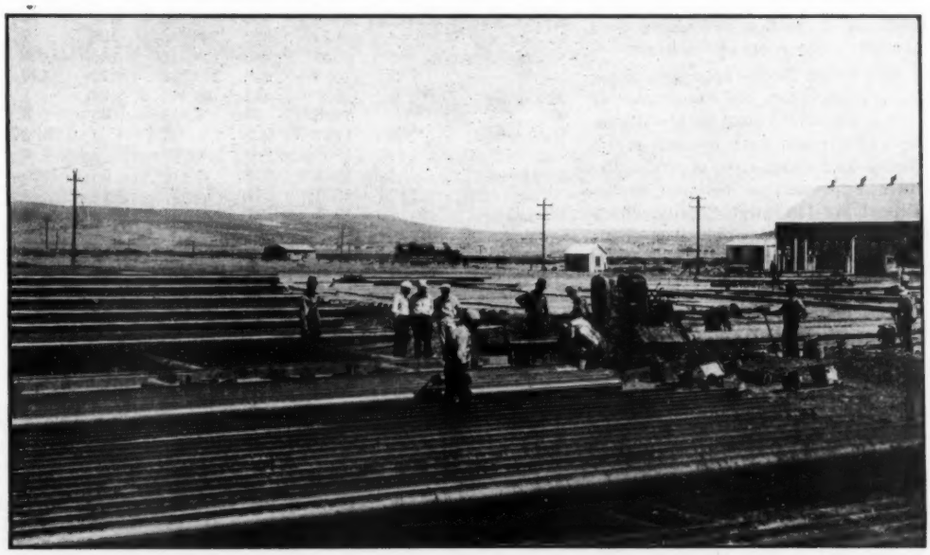
Projected 20-Mile Gas Line From Aldine to Houston

HOUSTON, Tex., Jan. 24.—Channel Gas Corp. has announced it will lay a 14-inch gas line from the new Bammel (Aldine) field, 20 miles north of Houston, to Houston, where it will serve industrial consumers. The announcement stated plans and specifications are being completed, and that laying the line will begin within 30 days.

This company will be the fourth to serve Houston industrial consumers, the others being United Gas System, Houston Pipe Line Co., and Humble Oil & Refining Co. The company is headed by H. C. Cockburn as president, with R. E. Smith, vice president; Claude Hamill, treasurer, and Mrs. Hortense Ward, secretary. Mr. Cockburn is president of Cockburn Oil Corp., while Mr. Smith and Mr. Hamill comprise the firm of Hamill & Smith, independent oil operators.

Hamill & Smith control most of the acreage in the Bammel area, where they completed the first well, a gas-distillate producer, several months ago. Further development of the area will be undertaken in the near future.

L. C. Doney is chief engineer of Channel Gas Corp. and will be in direct charge of laying the line.



Classification yard for reconditioned pipe: Cleaning, classifying, priming

32,650 Wells Completed Last Year Established New Mark

By JAMES McINTYRE

All drilling records were broken in the United States in 1937 during which 32,560 wells were completed, of which 23,600 wells were oil wells. In 1919 when oil averaged $2.05 per barrel; 29,269 wells were completed, and in 1926 29,275 wells were finished. These yearly records approached nearest to the record of last year.

If the footage drilled were known last year's total of feet drilled would make the 1919 and 1926 records fade into insignificance, as wells 10,000 feet deep ceased to be matters of wonder. In 1919 such depths were considered beyond the power of man to accomplish.

Texas led in number of wells drilled with 14,275, of which 11,030 were oil wells, and Southwest Texas led all divisions of the Lone Star state with a total of 3,038 wells completed, of which 2,129 were oil wells. The marvelous East Texas field, however, led all Texas divisions in the number of new oil wells, with 2,259.

Kansas enjoyed a banner year with 1,867 new oil wells out of 2,590 completions and California with 1,478 completed wells and 1,147 oil wells made a noteworthy showing.

In West Texas, nine major fields were either opened or substantially increased in productive area and immense reserves were added to the Permian Basin fields. Crane, Loving, Gaines, Hockley, Dawson and Ward counties all figured in the new crop of pools. Important extensions were made to older pools of the basin.

Southwest Texas operators made many discoveries, the importance of which the future must decide. Seventeen new pools were opened in the Texas Gulf Coast area, of which the most important is believed to be Friendswood in Harris County, which is expected some day to be listed with the great fields of all time. Fifteen hundred acres were proved up last year but it is expected the field will grow to large proportions. On the Louisiana side of the Gulf Coast district 14 pools were brought into being. The sensation of the year in Texas was what may be called the rediscovery of the K.M.A. deep sand field in Wichita County, which had been made to wait about seven years before it was proved to be one of the great finds of the state. By the close of the year it was estimated that 50,000 acres had been proven as potentially productive in the deep horizon, and a lively drilling campaign was on. The field is owned mostly by independents.

Summary of Completed Wells in All the Fields of the United States in 1937 and 1936

		Comp.	Init. prod. (bbls.)	Dry holes	Gas wells	Oil wells	Av. init. prod. (bbls.)
Eastern	1937	6,127	15,391	404	969	4,754	3.2
	1936	4,528	11,238	348	722	2,735	4.1
Central Ohio	1937	654	661	272	353	29	22.6
	1936	378	1,323	94	239	45	29.4
Lima, Ohio	1937	75	1,283	20	11	44	29.0
	1936	81	476	9	37	35	13.6
Indiana	1937	144	554	58	39	47	11.8
	1936	196	1,067	92	59	45	23.7
Kentucky	1937	834	14,313	234	193	407	35.2
	1936	326	16,758	96	10	220	76.2
Michigan	1937	932	307,806	277	69	586	525.3
	1936	795	63,840	245	212	338	189.0
Mississippi	1937	26	.....	23	3	0	...
	1936	17	.....	13	4	0	...
Alabama	1937	2	.....	2	0	0	...
	1936	4	.....	4	0	0	...
Florida	1937	1	.....	1	0	0	...
	1936	0	.....	0	0	0	...
Illinois	1937	392	80,282	117	3	272	295.1
	1936	35	1,288	8	0	27	47.7
Kansas	1937	2,590	1,479,293	606	117	1,867	792.3
	1936	1,721	965,777	446	61	1,214	799.5
Oklahoma	1937	2,672	677,156	697	123	1,852	365.6
	1936	2,565	1,264,939	649	126	1,790	706.7
North Central Texas	1937	2,492	257,395	1,088	46	1,358	189.5
	1936	2,654	179,181	1,196	40	1,418	126.4
East Central Texas	1937	737	151,135	97	19	621	243.4
	1936	407	42,242	110	14	283	149.3
East Texas	1937	2,338	106,833	79	0	2,259	47.3
	1936	2,456	95,639	120	1	2,335	40.9
East Texas Border	1937	289	96.070	33	19	237	405.4
	1936	194	107,003	22	10	162	660.5
West Texas	1937	2,806	2,018,229	331	11	2,464	819.1
	1936	1,586	915,473	193	24	1,369	668.7
Texas Panhandle	1937	830	312,029	33	156	641	486.8
	1936	650	254,352	23	161	466	545.8
Southwest Texas	1937	3,088	322,789	846	113	2,129	151.6
	1936	2,851	652,945	568	98	2,185	298.9
Gulf Coast—Texas	1937	1,695	649,782	313	61	1,321	492.0
	1936	1,226	375,217	284	40	902	416.0
Gulf Coast—Louisiana	1937	453	139,144	170	10	273	509.7
	1936	392	143,045	128	7	257	556.6
North Louisiana	1937	680	178,572	136	138	406	439.8
	1936	648	348,924	115	127	406	859.4
Arkansas	1937	182	68,495	78	1	103	665.0
	1936	89	7,319	60	5	24	305.0
Nebraska	1937	3	.....	3	0	0	...
	1936	0	.....	0	0	0	...
Montana	1937	217	12,810	56	26	135	95.0
	1936	247	15,587	47	34	166	93.9
Wyoming	1937	127	40,745	43	12	72	565.9
	1936	131	63,750	35	8	88	72.4
Colorado	1937	27	900	23	2	2	450.0
	1936	29	8,905	17	1	11	809.5
New Mexico	1937	665	541,861	64	27	574	574.0
	1936	552	549,835	47	17	488	1,126.8
Utah	1937	4	.....	2	2	0	...
	1936	8	15	6	1	1	15.0
California	1937	1,478	617,766	314	17	1,147	538.6
	1936	1,122	374,002	320	10	792	472.2
Total	1937	32,560	8,091,294	6,420	2,540	23,600	342.9
Total	1936	25,888	6,460,140	5,295	2,068	17,802	362.8
Difference		7,818	1,631,154	1,125	472	5,798	19.9
Total	1937	32,560	8,091,294	6,420	2,540	23,600	342.9
Total	1936	25,888	6,460,140	5,295	2,068	17,802	362.8
Total	1935	21,420	5,669,934	4,911	1,401	14,663	375.3
Total	1934	18,197	4,478,701	4,312	1,373	12,512	358.0
Total	1933	12,312	3,016,502	3,312	932	8,068	373.9

In Oklahoma 49 wildcat wells found oil or gas in commercial quantity and either opened pools or proved to be extensions of existing pools. The Milroy deep sand discovery in Stephens County, the Traugh pool in Seminole, the Hunton lime discovery in the Jesse pool in Pontotoc County, the Lamont pool in Grant County, of which much is expected, the North Bethel extension and the Dora pool in Seminole County, and the North Wellston pool in Lincoln County were outstanding. New pay discoveries were made in upper sands in the Oklahoma City field. Numerous pool extensions were completed.

Sixty-eight wells in Kansas, started as wildcats, opened oil or gas production, some of them later proving to have been extension wells, but many of them opening pools. Seventeen discovery wells made initial productions ranging from 1,000 bbls. up to 2,290 bbls.

The Tex-La-Ark district of East Texas border, North Louisiana and Arkansas experienced a fruitful year. The Marion County extension to the Rodessa field; the extension of the Rodessa field north into Arkansas; the opening of the Shuler field in Union County and the Buckner pool in Columbia County, Arkansas; the development of the Lisbon field and opening of deep production in the Cotton Valley field in North Louisiana were features.

One new pool each was opened in New Mexico, Wyoming and Colorado and important extensions to old pools, and deep sand discoveries were made. Pool extensions apply also to results in Montana.

Six fields were opened in California, four in Kern and two in Los Angeles County and all were started off by wells of large crude output, the discovery wells having averaged over 3,000 bbls. per well initially.

Thirteen pools were opened in the first year of the Illinois Coal Basin drilling campaign. Four pools were opened in Michigan: North and South Buckeye, Salem and Adams. In the Bradford field in northern Pennsylvania, a new sand was discovered. Three wells all making initial productions of 1,000 bbls. or better were completed.

1937 Production Exceeded all Nation's Past Performances

By JAMES McINTYRE

A total of 1,264,117,102 bbls. of crude oil was produced in the United States in 1937, breaking all previous records. Twenty fields produced 548,860,594 bbls., or 43 plus per cent of the whole.

The production figures are based on tank table measurements, which vary from 97 per cent to 100 per cent of the total quantity of oil produced. If actual production figures were used it would increase the total about 1 per cent, but the producers are paid on the basis of tank table measurements of the oil, and production is so reported.

As in the past several years, East Texas led all individual fields in production, which it is expected to do for some years to come, and Oklahoma City ranked second, as it did last year.

Added to Major Field List

Fifteen fields in the country were added to the list of major producers (fields averaging 10,000 bbls. per day for a period of a year). These were as follows:

Monument, New Mexico	10,968,485
Lance Creek, Wyoming	4,290,301
Lafitte, Louisiana	4,105,393
New Iberia, Louisiana	5,932,212
Government Wells, Texas	5,694,040
Olympic, Oklahoma	4,315,466
Moore, Oklahoma	3,895,797
Anahuac, Texas	4,352,378
Hastings, Texas	5,717,164
Plymouth, Texas	5,019,187
Tomoconnor, Texas	4,502,528
Talco, Texas	9,926,024
Mount Poso, California	6,723,416
Wilmington, California	14,181,162
Belridge North, California	5,699,911

In production by states, Texas led by a large margin and exceeded its output of 1936 by 78,571,180 bbls. Oklahoma increased its output 22,226,083 bbls. Kansas produced 12,073,942 bbls. more than in 1936. New Mexico made a splendid record with an increase of 11,790,613 bbls., which came from two counties in the state, and mostly from one county. California exceeded its 1936 production by 23,835,560 bbls. Michigan scored a great comeback, and did even better than in 1935. It produced 4,433,688 bbls. more last year than in 1936, when it appeared to be in a permanent slump.

The old Pennsylvania field, the grandfather of all oil fields, produced 19,173,500 bbls., or 2,132,500 bbls. more than in 1936, and more than it had produced in any year since 1896.

Louisiana had a 2,132,500-bbl. increase over the previous year, and Wyoming made a notable comeback with an increase of 5,368,379 bbls. in excess of its previous year's production.

Wells in Louisiana were permitted the highest average production per well, 56.47 bbls. per day. New Mexico wells averaged 54.09 bbls. per day per well, and California, where whatever production curtailment was practiced was voluntary, wells averaged 50.47 bbls. per day through the year.

Many old wells were plugged and abandoned last year in ancient fields, but the large increase in new oil wells raised the total of producing wells in the country to 351,206, and these averaged 9.84 bbls. per day per well during the year.

In 1936, 15 fields produced minus 42 per cent of all the year's crude output and in the previous year 15 fields produced minus 46 per cent of the 1935 total. The fact that the leading 21 fields in 1937 supplied only 43 plus per cent of the greatly increased production of last year is significant, as it shows the bulk of the increased production came from new pools that had not yet reached the position attained by the country's greatest fields. Many new discoveries were made in the past three years which strongly asserted themselves in their last year's production performance. On this page is a list of 15 pools that for the first time averaged as high as 10,000 bbls. a day or more for the whole year. Their combined output in 1937 was 95,323,464 bbls. of oil. Only two of them, Wilmington and Monument, are listed in the 20 leading producers of last year, but 13 of them, together with a multitude of smaller pools, most of them new or comparatively new, contributed to the very large percentage of production shown by the country out side of the 20 pool leaders.

LEADING POOLS AND THEIR PRODUCTION IN 1937

Rodessa, La., Tex., Ark.	31,757,814
Fitts, Oklahoma	30,976,949
Oklahoma City	54,776,210
Santa Fe Springs, California	15,749,710
Bradford, Pennsylvania	16,738,688
Midway-Sunset, California	26,492,082
Kettleman Hills, California	29,131,362
East Texas	169,237,733
Conroe, Texas	15,157,548
Huntington Beach	13,288,645
Long Beach	21,870,310
Pecos County, Texas	12,619,943
Van, Texas	11,479,825
Upton-Crane, Texas	10,847,364
Pampa, Texas	13,434,156
Saxet, Texas	12,477,593
Rice County, Kansas	15,253,335
Russell County, Kansas	11,378,563
Eunice, New Mexico	11,043,117
Monument, New Mexico	10,968,485
Wilmington, California	14,181,162
Total 21 fields	548,860,594
All other fields	715,256,508
Total United States	1,264,117,102

Production in the United States, 1928 to 1937, Inclusive

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	No. active wells Dec. 31, 1937	Dly. av. prod. per well (bbls.)
California	231,892,597	292,036,911	228,091,899	188,829,032	178,127,794	173,125,420	175,508,566	207,832,131	214,756,327	238,591,887	12,951	50.47
Oklahoma	247,500,851	252,229,474	216,114,591	175,703,848	149,487,234	178,356,449	178,652,012	182,596,874	200,880,705	223,106,788	55,074	11.10
Texas	255,354,357	298,713,694	292,392,102	328,608,575	314,378,759	401,808,452	378,233,017	391,592,331	424,396,034	502,967,214	78,018	17.66
Arkansas	32,137,934	25,443,570	20,114,782	15,626,407	12,529,870	11,449,635	11,359,458	11,138,586	10,697,345	12,181,083	2,727	12.24
Kansas	38,150,878	40,658,170	42,123,347	38,956,338	35,339,206	41,305,768	45,754,117	53,364,446	57,084,490	69,158,432	20,677	12.63
Wyoming	21,403,460	19,071,618	17,740,017	14,692,272	12,994,748	11,095,729	12,488,995	13,237,765	14,268,839	19,637,218	3,710	14.50
Louisiana	22,862,564	21,137,263	23,881,270	22,856,536	22,467,889	25,629,655	32,478,282	50,286,626	80,807,016	90,427,302	4,387	56.47
Illinois	6,475,000	6,356,500	5,651,000	4,717,000	4,801,000	4,252,000	4,472,000	4,351,000	4,439,000	7,426,000	13,100	1.55
Pennsylvania	9,914,000	11,804,800	12,918,000	11,862,000	12,395,000	12,677,000	14,572,000	15,899,000	17,041,000	19,173,500	79,550	0.66
Ohio	7,105,000	6,730,200	6,483,000	5,318,000	4,606,000	4,296,000	4,299,000	4,121,000	3,837,000	3,549,900	32,800	0.30
Kentucky	7,350,000	7,821,400	7,462,000	6,490,000	6,322,000	4,621,000	4,868,000	5,324,000	5,638,000	5,496,500	13,700	0.76
W. Virginia	5,746,000	5,608,600	5,111,000	4,477,000	3,907,000	3,827,000	4,133,000	3,959,000	3,814,000	3,829,000	13,170	0.79
Montana	3,998,549	3,827,067	3,203,808	2,847,201	2,320,155	2,358,056	3,509,015	4,367,228	5,798,661	5,799,364	1,666	9.53
New York	2,579,000	3,345,600	3,854,000	3,395,000	4,524,000	3,153,000	3,814,000	4,241,000	4,626,000	5,464,500	14,200	1.05
Colorado	2,744,184	2,361,595	1,623,639	1,492,862	1,114,064	914,881	1,130,375	1,555,542	1,612,760	1,578,391	192	22.52
New Mexico.	973,891	1,803,261	10,377,415	15,360,383	12,344,684	13,801,278	16,438,878	20,154,321	26,647,459	38,438,072	1,974	54.09
Indiana	1,054,000	905,800	900,000	831,000	806,000	732,000	816,000	767,000	792,000	821,200	1,490	1.51
Tennessee	50,000	20,000	20,000	7,000	5,000	7,000	11,000	.....	.....	.....	.....	.....
Michigan	613,000	4,391,200	3,589,000	3,733,000	6,834,000	7,863,000	10,566,518	15,789,905	11,977,063	16,410,751	1,820	24.7
Miscellaneous.	.....	.....	.....	.....	.....	.....	.....	43,000	.....	60,000	.....	.....
Total	897,995,265	1,004,266,723	901,740,870	845,803,454	785,304,403	901,273,323	903,104,233	990,620,755	1,089,113,699	1,264,117,102	351,206	9.84

Variation in Annual Crude Oil Production of Major Fields in United States, 1928 to 1937, Both Inclusive

Pool—	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Santa Fe Springs, California	16,093,931	76,477,464	44,251,396	24,272,660	22,538,036	18,268,904	14,722,264	16,158,795	16,460,142	15,749,710
Elwood-Goleta, California	895,152	9,435,819	14,606,307	10,470,059	5,441,626	4,918,488	4,113,644	4,559,588	4,478,732	3,206,333
Ventura Avenue, California	18,920,942	20,934,388	17,493,155	16,255,256	12,332,853	12,575,647	9,882,614	10,979,450	12,609,878	12,688,649
Seal Beach, California	12,436,371	14,418,305	8,026,796	4,882,115	4,522,489	3,987,459	3,515,457	3,380,526	3,461,067	3,415,184
Kern River, California	5,071,284	6,089,344	5,349,915	3,847,474	3,387,262	3,208,773	3,704,447	4,518,109	5,136,850	5,555,639
Mountain View, California	.....	.....	.....	.....	.....	231,756	2,609,017	9,228,891	9,712,658	6,835,954
Midway-Sunset, California	27,314,093	25,310,976	23,487,147	18,728,461	17,929,036	17,540,122	19,712,566	20,239,798	21,481,621	26,492,082
Elk Hills, California	8,107,198	6,353,035	6,572,379	4,925,636	4,537,461	4,488,688	3,345,772	3,216,318	3,194,445	3,785,942
Coalinga, California	4,655,284	3,558,843	3,373,078	2,978,392	3,649,578	4,424,043	6,594,950	7,249,417	6,067,079	5,773,718
Brea-Olinda, California	5,743,044	4,813,942	4,423,266	3,626,008	3,018,125	2,964,654	3,744,538	3,611,804	2,960,753	2,656,765
Coyote, California	4,901,988	4,176,035	3,890,047	3,751,857	3,716,467	3,694,139	4,144,036	4,540,417	3,943,619	4,276,075
Montebello, California	4,369,638	3,657,922	3,712,725	2,446,052	2,162,530	1,932,596	1,980,942	2,287,385	3,204,714	3,173,522
Richfield, California	6,798,673	5,776,258	3,643,578	2,443,186	2,263,699	2,466,518	2,925,001	2,803,703	2,442,508	3,149,090
Huntington Beach, California	19,642,278	16,007,030	11,108,203	7,778,549	8,016,801	13,100,489	15,106,258	15,133,293	13,247,499	13,288,645
Long Beach, California	62,467,103	60,495,555	36,599,688	30,166,409	27,435,553	24,825,049	23,067,025	26,562,848	24,994,299	21,870,310
Torrance, California	6,454,067	5,000,218	4,116,846	2,191,781	2,281,274	2,381,875	2,525,990	2,498,442	2,859,892	2,824,849
Inglewood, California	10,762,797	8,768,101	6,429,205	5,289,125	4,869,335	4,059,972	3,376,586	4,477,044	4,546,727	5,521,459
Dominguez, California	4,267,002	3,606,850	3,694,075	4,183,052	6,823,579	6,626,615	6,655,465	7,915,850	9,712,179	9,840,769
Playa Del Rey, California	.....	25,121	4,719,981	9,759,018	5,910,926	4,061,577	3,187,773	5,695,942	4,643,658	3,186,553
Kettleman Hills, California	199,699	1,951,786	6,209,357	16,544,824	21,959,601	21,624,020	21,393,882	27,606,817	29,295,959	29,131,362
Joiner, Texas	.....	.....	29,122	37,932,810	37,131,836	58,145,564	49,345,560	55,006,571	53,421,561	55,489,391
Kilgore, Texas	.....	.....	.....	43,537,815	39,086,616	63,537,717	55,200,902	58,074,728	50,290,190	51,704,986
Longview, Texas	.....	.....	.....	26,257,287	45,725,947	81,186,059	73,953,949	61,991,874	61,077,122	62,043,356
Conroe, Texas	.....	.....	.....	.....	2,499,645	21,286,672	17,143,444	15,269,014	14,909,126	15,157,548
Pecos County, Texas	22,673,875	41,733,955	42,603,498	27,401,174	23,654,666	20,983,060	16,443,127	16,472,495	14,003,494	12,619,943
Ward, South, Texas	.....	.....	.....	.....	.....	1,133,986	2,224,603	3,745,659	4,935,566	5,620,214
Pampa, Texas	7,795,865	18,406,284	21,782,549	14,861,340	11,244,964	10,386,789	12,333,756	11,176,761	10,892,282	13,434,156
Chalk-Settles, Texas	4,692,236	14,826,190	11,188,886	9,762,304	6,668,057	5,782,469	6,238,916	6,981,618	6,744,644	5,808,748
Barbers Hill, Texas	306,177	4,523,350	7,865,597	8,085,278	7,383,572	8,127,939	6,866,933	6,801,590	5,496,198	4,469,771
Sugarland, Texas	391,244	4,016,401	4,291,689	4,198,004	3,424,869	2,546,356	2,194,457	2,116,155	1,746,789	1,331,713
Wilbarger County, Texas	8,124,626	10,411,183	7,867,089	4,167,464	3,361,161	2,879,742	3,057,771	2,957,849	3,161,754	3,462,226
Humble, Texas	1,263,983	2,996,409	5,864,035	3,041,585	2,238,043	1,728,362	1,256,970	1,238,147	1,257,942	1,273,419
Pierce Junction, Texas	3,983,484	5,193,061	4,056,270	2,960,390	1,837,673	1,575,223	1,194,564	1,192,221	1,323,147	1,229,190
Shackelford County, Texas	3,639,368	4,145,166	2,319,132	1,203,841	1,445,565	1,159,515	1,959,846	2,115,026	2,457,758	2,568,262
Electra, Texas	4,627,192	4,601,996	3,995,470	2,941,619	2,988,143	2,773,284	2,673,291	2,696,428	2,880,526	3,225,023
Archer County, Texas	7,374,445	6,592,594	6,023,760	4,384,656	4,057,536	4,543,939	7,023,184	6,751,948	5,395,392	4,634,806
Loma Novia, Texas	.....	.....	.....	.....	.....	.....	.....	689,761	4,620,409	6,423,076
Hutchinson County, Texas	13,839,632	9,709,746	7,285,486	3,933,837	4,496,338	3,966,016	4,488,823	4,737,306	5,589,421	7,690,955
Big Lake, Texas	7,039,043	6,425,664	7,016,204	9,501,820	9,068,844	6,851,980	4,627,049	3,609,284	2,948,095	2,741,245
Hendrick, Texas	58,893,863	49,826,190	25,925,581	14,992,723	11,152,545	7,497,934	6,580,082	6,066,681	5,919,516	4,359,688
Luling, Texas	5,097,808	4,246,861	3,476,058	2,948,514	2,653,814	2,442,080	2,145,066	2,013,029	2,070,765	2,279,247
Hull, Texas	4,115,269	3,488,869	3,161,436	2,237,018	1,855,169	1,980,342	3,498,660	2,307,765	1,982,664	2,535,820
Spindletop, Texas	14,332,357	10,183,684	5,997,913	3,209,994	1,442,560	1,168,432	1,152,010	942,913	841,800	874,941
Powell, Texas	4,059,389	2,884,177	2,077,524	1,362,278	956,071	990,257	897,667	800,465	817,998	790,522
Young County, Texas	2,987,054	2,481,445	5,229,401	4,231,600	3,391,514	3,048,014	3,632,974	3,634,327	4,006,420	4,364,588
Van, Texas	.....	122,139	7,530,222	15,542,023	17,361,174	17,271,227	14,633,277	14,265,088	12,538,424	11,479,825
Refugio, Texas	25,312	2,063,475	11,698,202	9,291,937	3,521,832	2,148,847	1,475,353	1,537,763	1,822,193	2,269,232
Darst Creek, Texas	.....	228,876	11,343,682	7,963,694	6,080,127	4,413,259	3,348,204	3,262,328	1,680,213	2,759,230
Thompson, Texas	.....	.....	.....	731,624	4,223,213	4,938,511	4,215,513	4,131,977	3,528,733	4,108,386
Upton-Crane, Texas	25,261,260	17,195,992	14,152,389	7,102,015	7,375,773	6,155,487	6,214,891	6,323,177	8,615,460	10,847,364
Saxet, Texas	.....	.....	.....	9,373	154,712	821,961	713,668	1,162,222	4,585,637	12,477,593
Greta, Texas	.....	.....	.....	.....	.....	1,161,074	3,961,176	4,708,780	5,583,816	4,683,044
St. Louis-Pearson, Maud, Okla.	21,878,954	36,718,245	13,194,525	8,056,449	7,368,077	8,466,897	8,525,557	8,780,671	8,884,709	7,809,458
Oklahoma City, Oklahoma	110,496	8,709,727	34,603,067	44,822,508	33,397,537	66,984,570	60,833,486	53,385,882	51,231,766	54,776,210
Edmond, Oklahoma	.....	.....	.....	.....	.....	.....	91,953	1,478,309	4,370,495	5,884,427
Little River, Oklahoma	24,447,158	28,909,393	17,348,145	9,444,872	6,391,202	6,310,665	5,370,669	5,887,099	5,067,939	4,221,863
Marshall-Lovell-Crescent, Okla.	2,692,520	5,759,444	2,196,202	1,256,441	926,897	731,016	1,662,466	2,366,755	2,609,639	4,089,945
Allen, Oklahoma	6,958,689	8,971,530	6,579,898	3,839,577	3,255,495	3,342,983	3,065,168	2,896,745	3,076,287	2,511,447
Carr City, Oklahoma	.....	3,309,094	3,280,091	4,262,219	4,251,966	2,748,695	2,039,160	2,002,596	2,215,946	1,973,134
Seminole City, Oklahoma	18,237,004	11,291,330	6,562,504	4,370,314	3,959,604	3,932,217	3,779,065	4,062,102	3,810,242	3,428,077
Earlsboro, Oklahoma	33,321,824	25,602,005	23,398,033	12,699,233	10,689,164	10,915,763	7,679,214	7,414,338	6,600,719	5,595,999
Bowlegs, Oklahoma	23,800,896	12,122,250	6,509,450	4,391,549	4,200,043	3,917,746	3,760,842	3,844,699	4,335,377	4,178,171
Searight, Oklahoma	5,218,241	3,867,349	3,107,063	1,501,928	1,238,664	1,012,542	921,683	1,372,433	1,780,691	1,628,281
Sholem-Alechem-Tatums, Okla.	5,328,386	4,829,057	4,852,825	4,579,669	4,330,587	4,348,050	3,993,398	3,160,070	2,560,612	3,129,034
Burbank, Oklahoma	13,060,449	7,435,589	5,717,088	4,566,290	3,974,096	3,516,190	3,406,107	3,101,608	2,826,864	2,870,872
Tonkawa, Oklahoma	4,878,203	3,518,176	2,432,084	1,991,634	1,836,751	1,675,161	1,386,929	1,226,328	1,016,293	868,201
Bristow, Oklahoma	5,624,601	5,295,920	4,678,137	3,661,296	3,095,326	3,190,604	3,000,168	3,328,513	3,186,013	2,790,251
Cushing-Shamrock, Oklahoma	6,521,413	5,988,122	4,980,031	4,656,393	4,349,054	4,367,112	5,044,132	4,737,897	4,129,184	3,908,408
Cromwell, Oklahoma	3,386,553	2,867,933	2,604,682	1,897,207	1,827,744	1,806,735	1,690,002	1,557,176	1,337,443	1,265,008
Healdton, Oklahoma	5,068,978	4,599,309	4,208,631	4,025,058	3,880,981	3,638,589	3,386,150	3,397,410	3,435,656	3,653,768
Fish, Oklahoma	.....	.....	.....	.....	.....	995,658	1,381,190	3,422,342	3,113,762	2,077,047
Fitts, Oklahoma	.....	.....	.....	.....	.....	.....	329,389	6,900,869	19,908,495	30,976,949
Lucien, Oklahoma	.....	.....	.....	.....	.....	290,151	2,903,269	3,744,015	4,542,441	5,046,528
Garber, Oklahoma	2,943,248	1,973,902	1,639,045	1,293,054	1,066,194	1,005,710	898,110	789,114	733,200	760,611
Wewoka, Oklahoma	2,415,180	2,409,118	1,428,714	2,844,277	1,977,067	1,647,181	1,629,124	1,323,796	1,378,538	1,120,818
South Burbank, Oklahoma	.....	.....	.....	.....	.....	.....	2,279,191	4,216,470	5,390,399	5,579,341
Sedgwick County, Kansas	378,851	8,899,688	7,719,802	5,840,234	4,538,283	3,543,473	2,664,499	2,972,619	2,002,314	1,545,270
Eldorado-Augusta, Kansas	9,690,889	9,272,141	9,099,075	7,769,394	6,684,285	5,947,371	7,196,558	6,712,349	6,163,823	5,989,436
Rice County, Kansas	446,186	290,863	267,894	450,562	858,105	1,935,996	3,905,132	8,069,022	11,427,064	15,253,335
Russell County, Kansas	1,228,416	1,178,211	1,994,610	1,108,745	933,198	1,067,291	2,548,006	4,146,086	7,074,226	11,378,563
Summer County, Kansas	7,787,738	4,566,556	3,224,852	2,348,371	1,622,813	1,319,952	1,138,219	2,076,723	3,230,779	2,341,626
McPherson County, Kansas	.....	.....	5,604,670	9,184,393	7,748,212	11,763,473	9,869,841	6,975,064	4,464,439	4,450,978
Caillou Island, Louisiana	.....	.....	.....	.....	.....	338,576	1,355,288	2,872,415	5,232,961	6,290,800
Gillis, Louisiana	.....	.....	.....	.....	.....	.....	46,727	2,172,351	5,653,087	5,083,156
Rodessa, Louisiana-Texas-Arkansas	.....	.....	.....	.....	.....	.....	.....	1,326,116	22,066,361	31,757,814
Caddo, Louisiana	4,888,365	4,652,047	4,379,614	3,345,157	2,617,094	2,282,948	2,243,704	1,574,060	2,394,818	2,363,804
Haynesville, Louisiana	2,222,804	1,802,721	1,746,089	1,908,244	1,579,798	1,412,719	1,372,225	1,275,204	1,225,049	1,163,625
Bosco, Louisiana	.....	.....	.....	.....	.....	.....	1,014,144	6,356,368	4,621,671	3,031,370
Leesville, Louisiana	.....	.....	.....	153,134	276,009	370,377	4,230,753	5,012,492	4,996,628	3,072,140
Iowa, Louisiana	.....	.....	.....	17,312	466,164	3,370,962	5,311,703	7,249,167	6,648,058	6,235,381
Urania, Louisiana	2,656,050	2,120,465	1,905,492	1,478,549	1,267,008	914,664	1,116,093	1,091,132	1,013,378	1,022,398
Smackover, Arkansas	24,775,769	19,666,126	18,755,335	12,044,935	9,716,628	8,897,531	8,019,709	7,433,432	7,265,767	6,917,464
El Dorado-Champagnolle, Ark.	5,617,219	4,485,371	2,986,026	2,276,413	1,765,143	1,451,817	1,407,664	1,689,943	1,769,435	1,273,931
Salt Creek, Wyoming	14,066,819	11,365,322	10,517,980	8,846,658	7,918,399	7,026,294	6,597,796	6,389,780	6,014,134	5,952,821
Hobbs, New Mexico	34,934	740,165	9,459,319	14,596,714	11,768,252	11,210,908	12,437,853	11,062,508	9,043,343	7,310,713
Eunice, New Mexico	.....	.....	.....	.....	347,413	265,290	905,276	3,259,362	8,140,177	11,043,117
Sunburst, Montana	3,209,574	2,323,406	1,940,515	1,519,935	1,194,786	1,187,778	1,639,998	1,299,728	1,525,593	1,649,628
Bradford-Allegany, Pa.-N. Y.	8,418,000	11,274,000	12,249,065	11,419,000	12,682,124	12,500,513	13,791,617	16,376,668	16,352,000	20,421,885

Fifteen pools were added to the list of major fields in 1937. These and their total 1937 production were: Monument, New Mexico, 10,968,485 bbls.; Lance Creek, Wyoming, 4,290,301 bbls.; Lafitte, Louisiana, 4,105,393 bbls.; New Iberia, Louisiana, 5,932,212 bbls.; Government Wells, Texas, 5,694,040 bbls.; Olympic, Oklahoma, 4,315,466 bbls.; Moore, Oklahoma, 3,895,797 bbls.; Anahuac, Texas, 4,352,378 bbls.; Hastings, Texas, 5,717,164 bbls.; Plymouth, Texas, 5,019,187 bbls.; Tomoconnor, Texas, 4,502,528 bbls.; Talco, Texas, 9,926,024 bbls.; Mount Poso, California, 6,723,416 bbls.; Wilmington, California, 14,181,162 bbls.; North Belridge, California, 5,699,911 bbls.

Growth of Petroleum Exports Important Factor in 1937

By H. STANLEY NORMAN

NEW YORK, Jan. 24.—Pushed to an all-time record to supply foreign demand for petroleum, United States producers and refiners exported 3.109 bbls. of crude and products in 1937 to each barrel imported. The extent to which exports surged forward is best exemplified by the ratio to imports in 1936 when 2.30 bbls. were shipped abroad to each barrel received.

Exports of refined products during the first 11 months totaled 98,094,000 bbls., about 9.19 per cent of the domestic demand and 33.7 per cent higher than the shipments to foreign customers for the same period in 1936.

The increase in exports of crude oil for 1937, jumping from 46,518,000 bbls. for 11 months in 1936 to 62,170,000 bbls., was a gain of 33.6 per cent.

Considering that crude oil exports have risen to about 5 per cent of the domestic production and that refined products shipments are more than 9 per cent of this country's output, the foreign petroleum traffic takes on increased significance. The proportions to which it has grown makes the continuance or further extension of export trade of paramount importance to the domestic producing and refining industry.

Staging a sharp reversal in the 1936 trend, United States gasoline exports for 11 months last year increased 38.2 per cent, rising from 25,726,000 bbls. to 35,577,000 bbls., a gain of 9,851,000 bbls.

Wax exports increased the least of the more important petroleum products, but still the business abroad was 23.2 per cent greater in 1937 than during the preceding year and shipments increased 39,490,000 pounds to a total of 209,507,000 pounds for the 11 months.

But for the increase in petroleum imports, the ratio of exports over shipments would have been much greater. The increase of one-third in petroleum export demand was only partially offset, however, by a gain of about 24 per cent in imported refined products. The general increase of imports approximating 24 per cent was exclusive of wax receipts from foreign sources which almost doubled, climbing to 31,366,000 pounds, a gain of 96.7 per cent compared to 15,941,000 pounds for the same period in 1936.

Much of the increase in imports of refined products was checkmated by a drop of 18.9 per cent, or by 5,261,000 bbls, to 24,092,000 bbls. of crude oil for the 11 months.

For the complete year, the American Petroleum Institute reported a decline in crude oil imports of 4,876,000 bbls., to 27,683,000 bbls., a loss of 14.3 per cent compared to the 1936 figure of 32,559,000 bbls. The A.P.I. figures in Table 2 also show the grand total of petroleum imports by this country for 1937 increased only 1,479,000 bbls., to 56,977,000 bbls., a gain of less than 3 per cent.

Fuel oil accounted for practically all of the increase in petroleum imports. Purely from a rate of increase, gasoline outranked fuel oil in petroleum export trade.

For 11 months, the Bureau of Mines reported imports of gas oil and fuel oil at 21,668,000 bbls. last year, a gain of 4,546,000 bbls. over 1936, or 26.5 per cent. The item of "refined products" in Table 1, which includes fuel oil, shows imports for 11 months to have been 27,453,000 bbls., a gain of 5,058,000 bbls., or 22.6 per cent.

Of outstanding importance in the petroleum export trade of 1937 was the sharp gain in foreign demand for gas oil and distillate fuels, which are included in the general column headed "gas oil and fuel oil." Out of the increased export business shown by the Bureau of Mines to have been to the extent of 10,977,000 bbls., in 1937 over 1936, gas oil and distillate fuel, as contrasted to residual fuel, accounted for 9,601,000 bbls. of the gain. All gas oil and fuel oil exports increased 35 per cent to total 42,336,000 bbls. for the 11 months, but in gas oil and distillate fuel alone, the increase was by a much larger per cent.

The sharp gain of crude oil exports in 1937 over the preceding year was also a reversal to the 1936 trend over 1935. For each barrel of

(Continued on Page 174)

TABLE 1—IMPORTS AND EXPORTS FOR FIRST 11 MONTHS OF 1937

(Data from Bureau of Mines)

	Crude oil (barrels)	Ref. products (barrels)	Gasoline (barrels)	Kerosene (barrels)	Gas & fuel oil (barrels)	Lubricants (barrels)	Wax (barrels)
Imports							
1937	24,092,000	27,453,000	132,000	.....	21,668,000	.....	31,366,000
1936	29,713,000	22,385,000	.....	1,000	17,122,000	3,000	15,941,000
1935	28,903,000	18,719,000	20,000	.....	18,415,000	.....	18,635,000
1934	32,359,000	13,248,000	.....	.....	11,329,000	.....	.....
Exports							
1937	62,170,000	98,094,000	35,577,000	8,244,000	42,336,000	10,078,000	209,507,000
1936	46,518,000	73,326,000	25,726,000	6,201,000	31,359,000	7,683,000	170,017,000
1935	47,280,000	69,262,000	27,137,000	6,137,000	26,298,000	7,596,000	204,795,000
1934	38,690,000	67,236,000	23,051,000	8,964,000	25,648,000	7,167,000	.....

TABLE 2—IMPORTS OF CRUDE OIL AND REFINED PRODUCTS FOR 1937 AT PRINCIPAL UNITED STATES PORTS

(Data from A.P.I. reports)

	Baltimore (bbls.)	Boston (bbls.)	New York (bbls.)	Philadelphia (bbls.)	Others (bbls.)	Total (bbls.)	Gulf Coast (bbls.)	Grand Ttl. (bbls.)	Crude oil (bbls.)	Gasoline (bbls.)	Fuel oil (bbls.)	Gas oil (bbls.)	Other pet. oils (bbls.)
January	176,000	143,000	1,914,000	484,000	379,000	3,096,000	277,000	3,373,000	1,202,000	.....	1,961,000	69,000	141,000
February	163,000	342,000	1,512,000	172,000	240,000	2,429,000	233,000	2,662,000	536,000	.....	1,970,000	84,000	72,000
March	504,000	221,000	2,655,000	1,114,000	109,000	4,603,000	439,000	5,042,000	2,108,000	.....	2,631,000	229,000	74,000
April	427,000	487,000	2,930,000	1,091,000	317,000	5,252,000	452,000	5,704,000	2,873,000	.....	2,657,000	88,000	86,000
May	401,000	113,000	3,042,000	987,000	273,000	4,816,000	281,000	5,097,000	2,381,000	.....	2,375,000	.....	341,000
June	539,000	230,000	2,524,000	1,074,000	390,000	4,757,000	420,000	5,177,000	2,709,000	.....	2,116,000	.....	352,000
July	470,000	219,000	3,012,000	1,130,000	370,000	5,201,000	459,000	5,660,000	3,089,000	.....	2,322,000	.....	249,000
August	540,000	323,000	2,925,000	1,211,000	217,000	5,216,000	518,000	5,734,000	2,976,000	.....	2,600,000	.....	158,000
September	597,000	189,000	2,732,000	949,000	361,000	4,823,000	312,000	5,140,000	2,415,000	56,000	2,343,000	.....	326,000
October	663,000	230,000	2,069,000	943,000	401,000	4,305,000	309,000	4,615,000	2,718,000	.....	1,661,000	.....	236,000
November	373,000	265,000	1,934,000	680,000	374,000	3,626,000	226,000	3,852,000	2,012,000	89,000	1,751,000	.....	.....
December	357,000	195,000	2,836,000	911,000	58,000	4,357,000	564,000	4,921,000	2,664,000	.....	1,987,000	.....	270,000
Total, 1937	5,210,000	2,957,000	30,085,000	10,746,000	3,489,000	52,487,000	4,490,000	56,977,000	27,683,000	145,000	26,374,000	470,000	2,305,000
Total, 1936	5,700,000	4,862,000	27,600,000	9,529,000	2,463,000	50,154,000	5,344,000	55,498,000	32,559,000	(*)	21,561,000	635,000	743,000
Total, 1935	4,062,000	5,352,000	22,424,000	8,854,000	2,450,000	44,136,000	6,490,000	50,626,000	30,940,000	(*)	19,686,000	(*)	(*)
Total, 1934	4,081,000	1,595,000	27,512,000	8,540,000	2,781,000	44,509,000	3,437,000	47,948,000	32,231,000	(*)	15,574,000	(*)	(*)

*Totals unclassified.

TABLE 3—1937 RECEIPTS OF CALIFORNIA REFINERY PRODUCTS AT ATLANTIC PORTS

(Data from A.P.I. reports in barrels of 42 gallons)

	Baltimore	Boston	New York	Philadelphia	Others	Total	Gasoline	Kerosene	Fuel oil	Other pet oils	Crude oil
January	.....	.....	128,000	150,000	166,000	444,000	162,000	.....	249,000	33,000	.....
February	.....	.....	6,000	.....	99,000	105,000	34,000	.....	71,000	.....	.....
March	40,000	.....	183,000	116,000	25,000	364,000	116,000	65,000	183,000	.....	.....
April	41,000	.....	.....	234,000	151,000	426,000	426,000	.....	.....	.....	.....
May	139,000	.....	.....	60,000	448,000	647,000	450,000	64,000	.....	133,000	.....
June	.....	.....	76,000	358,000	79,000	513,000	444,000	69,000	.....	.....	.....
July	173,000	40,000	104,000	355,000	133,000	805,000	577,000	91,000	.....	137,000	.....
August	47,000	.....	81,000	352,000	180,000	660,000	545,000	.....	.....	47,000	68,000
September	.....	.....	24,000	228,000	278,000	530,000	451,000	79,000	.....	.....	.....
October	102,000	.....	249,000	233,000	76,000	660,000	382,000	81,000	.....	135,000	62,000
November	.....	.....	.....	159,000	194,000	353,000	242,000	.....	69,000	42,000	.....
December	80,000	.....	75,000	77,000	29,000	261,000	75,000	.....	186,000	.....	.....
Total, 1937	622,000	40,000	926,000	2,322,000	1,858,000	5,668,000	3,904,000	449,000	758,000	527,000	130,000
Total, 1936	607,000	198,000	1,863,000	2,689,000	2,374,000	7,731,000	5,823,000	995,000	621,000	292,000	.....
Total, 1935	767,000	420,000	2,303,000	3,307,000	2,897,000	9,694,000	7,335,000	1,118,000	1,241,000	.....	.....
Total, 1934	1,831,000	3,201,000	9,389,000	4,891,000	7,515,000	2,520,000	8,610,000	1,626,000	14,946,000	.....	.....

Average Prices of Refined Oils Show Slight Improvement During 1937

By D. H. STORMONT

Average prices received by the refiner for his petroleum products during 1937 were, with the exception of gasoline in some sections of the United States, slightly higher than those received in 1936 and for most products were the highest received since 1930. Demand for refined oils also set new records so that the combination of a fair price and record demand enabled the oil industry to make the best net earnings of any year since 1929. This showing was made despite the business recession in the latter part of the year, without which the statistical position of the refined prices would have undoubtedly been much higher.

Early-Year Prices Firm

For as the refined oil market entered the year the industry as a whole was in a healthful condition. Stocks of crude oil were at low levels and gasoline inventories had been built up only some 5,000,000 barrels from the low point of 1936. Prices of all products were substantially higher than at that time in 1936 and following the general increase in the price of crude, refined oil quotations east of California were advanced in proportion with but few exceptions. A fairly strong market for all products, except those seasonally quiet, prevailed throughout the early months and continued on a stabilized basis until about the middle of the year, although both crude production and refining activities were at the highest level in history. Thus when the industry collided with the business recession it was moving at top speed. Unable to curtail the high rates of production at once the result was that all products lost ground except the seasonally active heating oils.

As the year closed the crude production and refining activities were in better balance with demand. However, there is still some 14,000,000 bbls. of gasoline and 16,000,000 bbls. of crude, added to stocks during 1937, that will have to be taken into consideration in 1938 production schedules.

Of the various refined oils on the accompanying tables, the furnace oils and bright stocks show the greatest improvement over the average prices of the former two years. An unprecedented high domestic and export demand kept the market in a firm condition through the year and as a result prices fluctuated but very little. Domestic consumption of these fuels is expected to exceed that of 1936 by some 13 per cent, while export demand is estimated at over 50 per cent higher.

Refiners outside of California received slightly lower prices for their tankcar gasoline in 1937, the average price for Group 3 gasoline being 5.82 cents as compared with 5.88 cents in 1936. For Pennsylvania the prices were 5.44 and 5.65 cents, respectively. Therefore, in view of the fact that these refiners were paying more for their crude than in 1936 the profit derived from the manufacture of gasoline was considerably less.

Bright stocks and steam refined oils recorded substantial advances in price in both Oklahoma and Pennsylvania, but neutral oil prices outside of Pennsylvania were lower than in 1936. Oversupply of Pennsylvania crude greatly reduced lubricant prices in that area during the last quarter of 1937. Prices in other areas were affected to some extent. but not nearly as great as in past years.

The natural gasoline market on the West Coast was in an excellent condition during 1937, the average price for the year exceeding that of 1936 by .6 cent. In the Mid-Continent, however, naturals failed to hold the strength manifested in the first half of the year. For the first six months the average for the 26-70 grade was over one-quarter cent higher than in the same period of 1936. In the second half, however, due to the weakened condition of the tankcar gasoline market, prices declined when the naturals were in their most active demand. As a result the average price for the year was only slightly higher than the 1936 average.

The California refined oil market made the greatest improvement in prices during the year. Average prices of all products, without exception, show a substantial increase over those received in 1936. Prices on U. S. Motor gasoline averaged 1.35 cents higher than in the previous year, an unusually stable tank-wagon and tankcar market prevailing throughout the year. Using the 54-58 U. S. Motor grade as an example, shows that the price fluctuated only one-half cent during the year, or from 7 to 7½ cents; whereas in 1936 quotations varied from 3¾ cents to 7 cents. The average price received for kerosene in 1937 was .0432 cent as compared with .0339 cent in 1936, while 24 diesel prices were $1.17 and $1.03, respectively, per barrel.

California Has Good Year

Export shipments of both crude and refined oils to the Orient, coupled with an unprecedented high domestic consumption, enabled California refiners to operate at relatively high levels during most of the year without fear of disturbing the balance of supply and demand. During November the transpacific movement of crude and refined oils mounted to a high of over 5,000,000 bbls. Thus the large consumption of petroleum products at the highest prices in more than six years enabled most California companies to show the best earnings since 1929.

The export market also made an impressive gain in 1937, with prices of all products averaging well above the 1936 levels. Shipments to the Orient and to European countries during the year were from 30 to 50 per cent higher for both crude oil and refined products. Exports of the distillate group made the greatest gain, over 52 per cent. Motor fuel exports were the next highest with a gain of over 38 per cent.

AVERAGE YEARLY PRICES ON MOST IMPORTANT REFINERY PRODUCTS, 1928 TO JANUARY 1, 1938

(Price in Tankcar at Plant)

OKLAHOMA

	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
U. S. Motor gasoline (regular grade), per gal.	$.0582	$.0588	$.0492	$.0444	$.0363	$.0392	$.0345	$.0634	$.0775	$.0795
Natural gasoline, 26-70 (AA grade), per gal.	.0367	.0361	.0320	.0260	.0290	.0222	.0301	.0524	.0683	.0734
41-43 water white kerosene, per gal.	.0413	.0365	.0353	.0322	.0279	.0315	.0231	.0358	.0517	.0517
Below 18 fuel oil, per bbl.	.7780	.6619	.6232	.5930	.3899	.3250	.2904	.5225	.5260	.6298
U.G.I. gas oil, per gal.	.0289	.0251	.0233	.0201	.0146	.0146	.0127	.0227	.0265	.0247
200 vis. neutral, 3 color, per gal. (15-20 cold test)	.0996	.1043	.1075	.0994	.0845	.0834	.0924	.1059	.0966	.0947
124-126 wax, per lb.	.0286	.0245	.0224	.0346	.0253	.0170	.0174	.0216	.0321	.0394
150-160 D color bright stock, per gal.	.1859	.1769	.1496	.2030	.1852	.1837	.1631	.2977	.3368	.2310
Crude (36 A.P.I. gravity), per barrel	1.21	1.10	1.00	1.00	.62	.88	.63	1.23	1.37	1.31

CALIFORNIA

	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
U. S. Motor gasoline, per gal. (low octane)	$.0737	$.0602	$.0552	$.0624	$.0523	$.0546	$.0510	$.0806	$.0849	$.0919
Natural gasoline, 75-85, 375 e.p., per gal.	.0676	.0617	.0506	.0575	.0462	.0447	.0418	.0712	.0803	.0726
38-43 kerosene, per gal.	.0432	.0339	.0409	.0458	.0384	.0398	.0425	.0455	.0569	.0611
27 plus diesel*	1.175	1.035	1.084	1.032	.8406	.7432	.7510	.8365	.9000	1.1500
Crude (25 A.P.I. gravity, Signal Hill), per barrel	1.03	.997	.85	.94	.84	.83	.76	1.16	1.105	.96

PENNSYLVANIA

	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
U. S. Motor gasoline, per gal. (below 60 octane)	$.0544	$.0565	$.0521	$.0519	$.0505	$.0568	$.049	$.0737	$.0905	$.0982
45 water white kerosene, per gal.	.0507	.0504	.0467	.0448	.0446	.0451	.04	.0501	.0651	.0635
Bright stock, 10-15 pour test, per gal.	.2422	.2361	.1990	.2540	.2407	.2466	.2094	.3373	.4745	.3186
Crude (in National Transit Lines), per barrel	2.64	2.42	2.17	2.47	1.86	1.88	1.81	2.55	3.69	2.98

*1936 and 1937 prices are on 24 plus diesel.

AVERAGE DOMESTIC AND EXPORT REFINED PRICES OVER PAST THREE YEARS

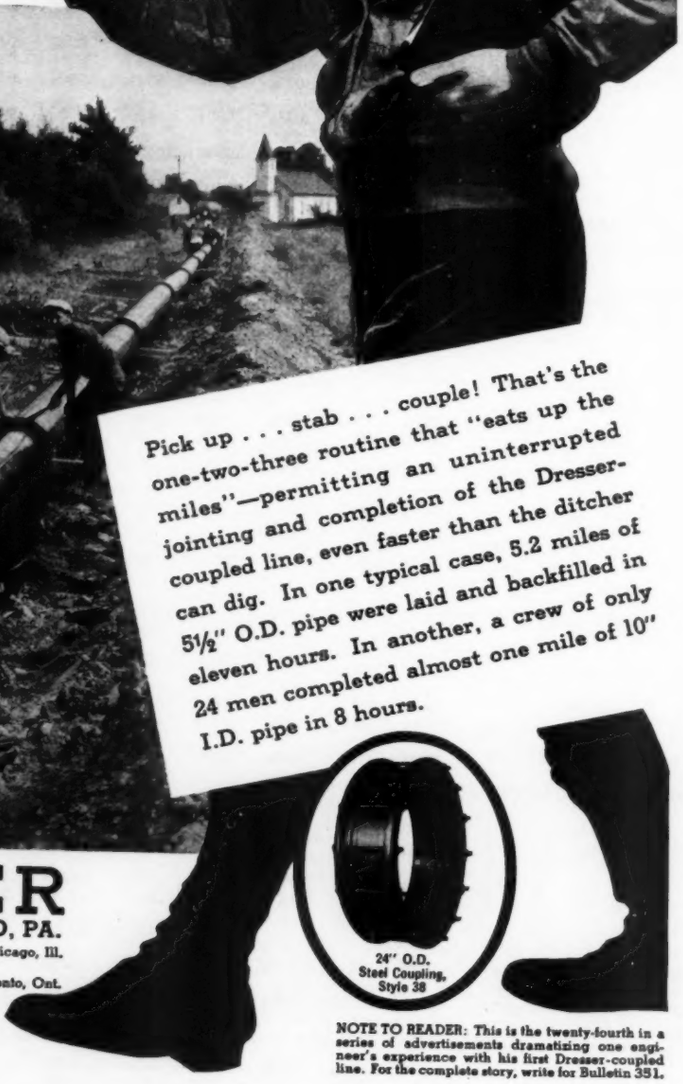
(QUOTATIONS F.O.B. PLANTS AND TERMINALS)

	1937					1936					1935				
GASOLINES—	Av. pr. for yr.	High	Low	1st 6 mos.	2nd 6 mos.	Av. pr. for yr.	High	Low	1st 6 mos.	2nd 6 mos.	Av. pr. for yr.	High	Low	1st 6 mos.	2nd 6 mos.
Oklahoma (Group 3):															
U. S. Motor grades:															
Regular, 70-72 octane	.0582	.06⅛	.05	.0594	.0570	.0588	.06⅛	.05½	.0601	.0575	.0492	.05⅝	.03¼	.0422	.0551
Third grade, below 62 octane	.0475	.05⅛	.04	.0488	.0462	.0485	.05¼	.04½	.0498	.0472	.0441	.04¾	.03¼	.0407	.0475
60-62 400 (below 60 octane)	.0475	.05⅛	.04	.0488	.0462	.0485	.05¼	.04½	.0498	.0472	.0443	.04¾	.03⅜	.0410	.0475
64-66 375	.0504	.05¼	.04½	.0513	.0495	.0502	.05⅜	.04⅞	.0525	.0491	.0459	.04⅞	.03¾	.0431	.0487
North Texas:															
U. S. Motor, below 62 octane	.0475	.05⅛	.04	.0487	.0462	.0485	.05¼	.04⅝	.0496	.0474	.0442	.04¾	.03¼	.0409	.0475
64-66 375	.0499	.05¼	.04½	.0505	.0494	.0506	.05¼	.04⅞	.0521	.0492	.0459	.04⅞	.03⅝	.0430	.0487
Pennsylvania:															
U. S. Motor, below 60 octane	.0544	.06	.04½	.0528	.0559	.0565	.05⅞	.05¼	.0562	.0568	.0521	.06½	.04	.0496	.0546
California:															
54-58, U. S. Motor	.0737	.07½	.07	.0725	.0750	.0602	.07	.03¾	.0504	.0700	.0552	.07	.03½	.0672	.0434
New York (Bayonne, N. J.):															
U. S. Motor, below 65 octane	.0713	.07½	.06½	.0692	.0733	.0673	.07	.06½	.0688	.0658	.0594	.06½	.05½	.0578	.0610
65 octane and above	.0745	.08	.06¾	.0721	.0769	.0698	.07¼	.06¾	.0713	.0683	.0619	.06¾	.05¾	.0602	.0635
U. S. Motor, below 65 octane	.0598	.06½	.05⅜	.0587	.0609	.0581	.06	.05⅜	.0576	.0585	.0521	.05⅜	.05	.0515	.0527
U. S. Motor, 65 octane and above	.0620	.06½	.05½	.0619	.0620	.0600	.06⅛	.05⅝	.0596	.0604	.0541	.05⅝	.05¼	.0530	.0552
NAPHTHAS—															
Pennsylvania:															
50-52 450 (blending)	.0532	.05⅞	.04⅝	.0514	.0551	.0550	.05¾	.05⅛	.0550	.0551	.0489	.05⅞	.04	.0466	.0512
NATURAL GASOLINES—															
Oklahoma (Group 3):															
Grade 26-70	.0367	.04½	.03	.0337	.0397	.0361	.04¾	.02½	.0310	.0411	.0320	.04¼	.02	.0287	.0353
Grade 18-55	.0439	.05⅜	.03½	.0405	.0473	.0431	.05⅝	.03	.0375	.0487	.0404	.05	.02¾	.0355	.0452
California:															
75-85 375-390	.0676	.07	.06¾	.0677	.0675	.0617	.07	.04¾	.0533	.0700	.0506	.06½	.04½	.0551	.0462
KEROSENE—															
Oklahoma (Group 3):															
41-43 water white	.0413	.04¼	.03⅞	.0416	.0410	.0365	.04½	.03⅛	.0394	.0336	.0353	.03⅞	.03¼	.0374	.0331
North Texas:															
41-43 water white	.0417	.04⅜	.03⅞	.0422	.0412	.0369	.04⅜	.03⅛	.0397	.0341	.0343	.03⅞	.03¼	.0360	.0325
Pennsylvania:															
45 water white	.0507	.05½	.04⅝	.0490	.0524	.0504	.05½	.04½	.0529	.0478	.0467	.04⅞	.04¼	.0467	.0466
California:															
38-43 high burning test	.0432	.05½	.03¼	.0384	.0480	.0339	.04	.03¼	.0331	.0347	.0409	.04¾	.03¼	.0456	.0363
New York (Bayonne, N. J.):															
41-43 water white	.0573	.06 3/10	.05	.0556	.0590	.0486	.05¼	.04⅝	.0502	.0470	.0518	.05¼	.04⅝	.0549	.0487
Gulf Coast:															
41-43 water white	.0508	.05½	.03¾	.0508	.0507	.0400	.04¾	.03⅞	.0405	.0396	.0433	.04¾	.04	.0440	.0425
FURNACE OILS AND TRACTOR FUELS—															
Oklahoma (Group 3):															
32-36, No. 2 straw	.0355	.03⅞	.03¼	.0348	.0363	.0313	.03⅝	.02¾	.0322	.0304	.0283	.03⅛	.02⅝	.0283	.0282
38-40, No. 1 straw	.0372	.04	.03⅝	.0369	.0375	.0329	.03⅝	.02⅞	.0342	.0316	.0308	.03¼	.02⅝	.0319	.0296
38-42, No. 1 prime white	.0392	.04⅛	.03¾	.0389	.0396	.0343	.03⅞	.03	.0360	.0326	.0324	.03⅜	.03	.0334	.0312
New York (Bayonne, N. J.):															
No. 1	.0588	.06 3/10	.05½	.0574	.0602	.0484	.05¼	.04½	.0503	.0466	.0513	.06	.04⅝	.0540	.0486
No. 4	.0503	.05¼	.04½	.0488	.0519	.0389	.04½	.03½	.0418	.0361	.0397	.04¾	.03½	.0428	.0366
GAS OIL, DIESEL OIL AND FUEL OIL—															
Oklahoma (Group 3):															
U.G.I. gas oil	.0289	.03⅛	.02¾	.0280	.0298	.0251	.02⅞	.02⅛	.0241	.0261	.0233	.02⅝	.02	.0230	.0235
Below 18 fuel oil, industrial	.7780	.80	.70	.7831	.7730	.6619	.70	.60	.6288	.6950	.6232	.65	.60	.6130	.6333
California:															
24 plus diesel, per bbl.*	1.18	1.50	1.00	1.08	1.29	1.035	1.10	1.00	1.07	1.00	1.084	1.150	1.050	1.110	1.057
Gulf Coast:															
28-30 diesel (bunkers)	1.76	1.90	1.50	1.64	1.88	1.54	1.70	1.50	1.59	1.50	1.700	1.700	1.700	1.700	1.700
New York (Bayonne, N. J.):															
28-30 diesel (lighterage 6¼ cents bbl.)	2.08	2.20	1.65	1.95	2.20	1.65	1.65	1.65	1.65	1.65	1.761	1.89	1.65	1.872	1.650
Bunker C (New York harbor)	1.27	1.35	1.15	1.22	1.31	1.08	1.15	1.05	1.05	1.11	1.067	1.15	.95	1.150	.983
NEUTRAL OILS—															
Oklahoma (Group 3):															
200, 3 color, 15-20 cold test	.0996	.10	.09½	.0992	.1000	.1043	.10¾	.09½	.1075	.1012	.1075	.10¾	.10¾	.1075	.1075
Pennsylvania:															
200, 3 color, 10 pour test	.2567	.29	.21	.2663	.2471	.2281	.24½	.21½	.2269	.2294	.2579	.30	.22½	.2754	.2404
Gulf Coast:															
200, 3 pale oil	.0696	.07	.06½	.0692	.0700	.0672	.07	.06½	.0694	.0650	.0722	.07¼	.07	.0743	.0700
200, 5-6 red oil	.0714	.07¼	.06¾	.0702	.0725	.0675	.07	.06½	.0694	.0655	.0700	.07	.07	.0700	.0700
California:															
200, 2½-3 pale oil	.0708	.07¼	.06¼	.0697	.0718	.0646	.07¼	.06¼	.0667	.0625	.0910	.12½	.07¼	.1077	.0743
BRIGHT AND STEAM REFINED STOCKS—															
Oklahoma (Group 3):															
150-160, zero to 10, D color	.1859	.20	.16	.1938	.1781	.1769	.18½	.17	.1756	.1783	.1496	.17	.13½	.1400	.1592
631 green (treated), S.R.	.1583	.17½	.13	.1619	.1546	.1267	.14	.09½	.1179	.1354	.0872	.09½	.07½	.7904	.9500
Pennsylvania:															
600 S.R.	.1374	.17½	.07	.1617	.1131	.1238	.13½	.09½	.1157	.1320	.0891	.10½	.07½	.0824	.0957
Bright stock, 10 pour test	.2422	.28	.18	.2694	.2150	.2361	.24½	.22	.2298	.2425	.1990	.22	.17½	.1883	.2096
WAX—															
Oklahoma (Group 3):															
124-126 (crude scale)	.0286	.03	.02⅝	.0272	.0300	.0245	.02¾	.02¼	.0245	.0245	.0224	.03⅛	.02	.0236	.0212
New York (Bayonne, N. J.):															
125-127 (a.m.p.)	.0455	.0455	.0455	.0455	.0455	.0455	.0455	.0453	.0455	.0455	.0428	.040	.045	.0426	.0430
EXPORT PRICES—															
Gasoline—Gulf Coast:															
U. S. Motor	.0576	.06⅛	.05¼	.0563	.0588	.0528	.05½	.05	.0531	.0525	.0473	.05⅝	.04⅜	.0450	.0495
64-66 375	.0606	.06⅜	.05⅝	.0597	.0615	.0560	.05¾	.05⅝	.0567	.0554	.0510	.05⅞	.04¾	.0493	.0526
Los Angeles, Calif.:															
U. S. Motor, 55-65 octane	.0503	.06	.04¾	.0475	.0531	.0450	.04¾	.04	.0429	.0470	.0400	.04	.04	.0400	.0400
U. S. Motor, 65-69 octane	.0531	.06¼	.05	.0500	.0561	.0475	.05	.04¼	.0454	.0495	.0433	.04½	.04¼	.0434	.0425
Lubricants—New York (f.a.s. in bbls.):															
600 S. R. unfiltered	.2170	.24	.16½	.2284	.2056	.1898	.20	.16½	.1813	.1984	.1556	.14	.16½	.1462	.1650
Bright stock, No. 8 color	.2994	.32	.23½	.3082	.2906	.2749	.29½	.26	.2633	.2865	.2355	.26	.21	.2223	.2487

*1935 prices are those on 27 plus diesel.

"WHAT A LOT OF PIPE A MERE HAND-FUL OF WORKMEN CAN LAY—WHEN IT'S A DRESSER-COUPLED LINE!"

Pick up . . . stab . . . couple! That's the one-two-three routine that "eats up the miles"—permitting an uninterrupted jointing and completion of the Dresser-coupled line, even faster than the ditcher can dig. In one typical case, 5.2 miles of 5½" O.D. pipe were laid and backfilled in eleven hours. In another, a crew of only 24 men completed almost one mile of 10" I.D. pipe in 8 hours.



24" O.D. Steel Coupling, Style 38

NOTE TO READER: This is the twenty-fourth in a series of advertisements dramatizing one engineer's experience with his first Dresser-coupled line. For the complete story, write for Bulletin 351.

S. R. DRESSER MANUFACTURING CO. • BRADFORD, PA.

230 Park Avenue, New York, N.Y. Peoples Gas Building, Chicago, Ill.
Shell Building, Houston, Texas
In Canada: Dresser Mfg. Company, Ltd., 60 Front St., W., Toronto, Ont.

Station Gasoline Prices During 1937 Average Highest in Seven Years

By D. H. STORMONT

The average service-station price of regular-grade gasoline during 1937 continued the advance started in 1933, the average price for the year being 14.4 cents per gallon, exclusive of all taxes, as compared with 14.11 cents per gallon in 1936. The average, based on dealer prices of gasoline in 50 cities throughout the United States, was the highest price received by the service-station operator since 1930. The poor showing made by the market during the last two months of the year lowered the yearly average somewhat, but despite this falling off 1937 as a whole was a good year for most dealers.

At the start of 1937 the average of the 50-cities list was 14.09 cents per gallon and on February 1, 14.10 cents. On March 1, as a result of the crude price advance and the accompanying rise in tankcar gasoline prices, the composite price moved up to 14.46 cents. May and June saw slight additions made to the March 1 price and from then until November the 50-cities average remained relatively unchanged, although there was a slight softening tendency during September and October. Then during November, as the market seasonally weakened, the effects of over production of both crude and gasoline during the earlier months of the year became more apparent and as a result the average was only 14.13 cents on December 1.

In comparison with the preceding few years there were comparatively few price changes during 1937, and the majority of the changes made were those involved in general price advances or reductions. A study of the table of price changes during the year shows that during the early part of February prices were advanced at nearly all points on the list, excepting the West Coast. Minor adjustments were made through March, April and May, and then during June a widespread recession in price took place as a result of price cutting in the Central West. July saw a general advance on the East Coast and in the southeastern states to bring the average up to 14.54 cents and from then until the close of the year the trend was generally downward with the year's greatest reduction coming in November.

The movement toward the dealer-marketing plan continued during the year and as a result prices in the various cities of the list, excepting those on the West Coast, are based on the tankwagon dealer price. Under the company-owned, marginal contract basis of operation the marketing company posted the service-station price, which was used in compiling the 50-cities list. Now, however, the oil company merely posts the dealer price, to which the service-station operator adds his margin of profit. In most instances this margin is 4 cents. The dealer may be underselling this established price, but if continued in most instances it usually results in lowering the price to subnormal so that the dealer price is correspondingly reduced. Thus the dealer price plus normal margin gives a figure usually identical to the posted pump price.

A study of the tables listing gasoline prices

Year-to-Year Trend of Retail Gasoline Prices

Average Service-Station Prices in Cents in 50 Representative Cities, Exclusive of Tax

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
January 1	16.41	18.32	17.23	14.56	12.87	12.54	14.32	12.90	13.70	14.09
February 1	16.38	17.59	16.96	14.83	12.97	11.63	13.87	13.16	14.21	14.10
March 1	16.80	17.21	16.28	14.86	12.91	11.49	14.18	13.22	14.22	14.46
April 1	17.16	17.38	15.92	13.68	13.18	11.58	13.57	13.28	13.87	14.47
May 1	17.47	17.48	16.95	12.40	13.59	11.60	13.55	13.64	14.27	14.55
June 1	17.56	18.32	17.01	12.21	13.68	10.82	13.93	13.90	14.31	14.58
July 1	17.56	18.48	16.56	12.46	14.21	13.06	14.06	14.00	14.26	14.42
August 1	18.12	18.22	16.47	12.41	14.02	13.52	13.98	14.10	14.24	14.54
September 1	18.40	18.22	16.26	12.21	13.65	14.00	13.89	13.78	14.21	14.53
October 1	18.70	18.32	15.93	12.34	12.46	14.45	13.55	13.42	14.07	14.49
November 1	18.05	17.84	15.41	12.32	13.04	14.30	11.92	13.46	13.99	14.45
December 1	18.39	17.51	14.96	12.89	12.96	14.17	12.43	13.69	13.97	14.13
Average	17.63	17.91	16.33	13.09	13.30	12.76	13.60	13.55	14.11	14.40

Comparison of Net Service-Station Prices January 1, 1937, and January 1, 1938

Atlantic and New England States

	Jan. 1 1937	Jan. 1 1938
Portland, Me.	13.3	13.3
Burlington, Vt.	13.4	13.9
Hartford, Conn.	12.6	13.1
Springfield, Mass.	12.8	13.0
New York, N. Y.	13.0	13.5
Philadelphia, Pa.	12.5	11.75
Providence, R. I.	12.3	12.8
Newark, N. J.	12.0	12.25
Baltimore, Md.	12.5	12.75
Dover, Del.	12.5	13.0
Washington, D. C.	12.5	13.0
Average	12.6	12.9

Central

Fargo, N. D.	15.1	14.7
Huron, S. D.	14.6	14.1
Wichita, Kans.	12.6	11.9
Omaha, Neb.	14.1	13.7
Tulsa, Okla.	15.0	14.0
Dallas, Tex.	12.0	13.5
Little Rock, Ark.	13.0	13.75
Kansas City, Mo.	13.1	12.6
Des Moines, Iowa	13.5	13.1
Duluth, Minn.	14.5	14.0
Minneapolis, Minn.	14.1	13.7
Milwaukee, Wis.	14.0	13.5
Chicago, Ill.	13.2	12.8
Peoria, Ill.	13.7	13.3
Detroit, Mich.	12.5	13.1
Indianapolis, Ind.	14.4	13.9
Cleveland, Ohio	14.5	13.5
Average	13.8	13.5

Southeastern

	Jan. 1 1937	Jan. 1 1938
Norfolk, Va.	13.5	13.75
Charleston, W. Va.	14.3	14.55
Louisville, Ky.	14.0	14.0
Memphis, Tenn.	14.0	14.25
Atlanta, Ga.	15.5	15.0
Charlotte, N. C.	14.9	15.15
Charleston, S. C.	13.5	13.75
Jackson, Miss.	15.0	14.0
Birmingham, Ala.	15.0	15.0
New Orleans, La.	13.0	13.25
Jacksonville, Fla.	13.0	13.0
Average	14.1	14.1

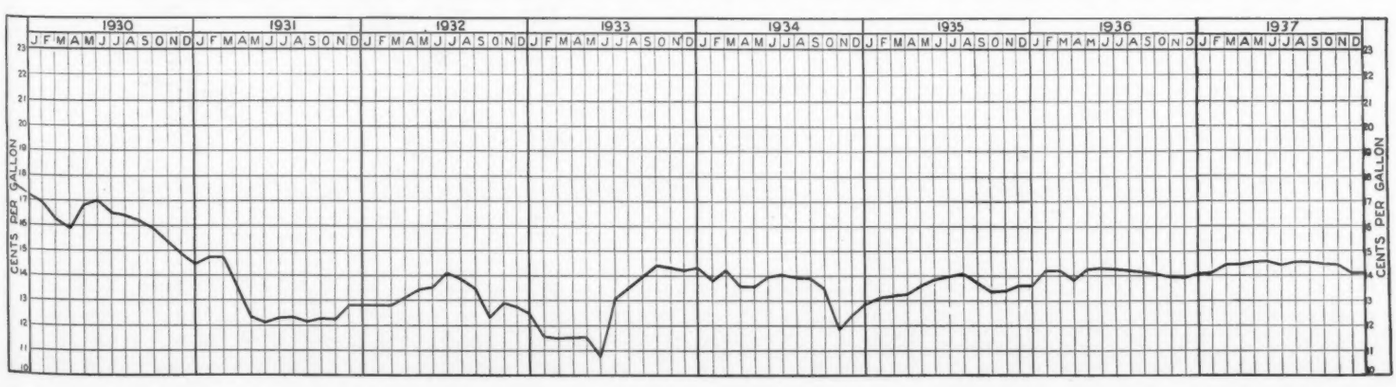
Midwestern

Helena, Mont.	18.5	17.5
Boise, Idaho	18.5	19.5
Casper, Wyo.	16.5	16.0
Reno, Nev.	15.5	16.0
Salt Lake City, Utah	18.0	18.5
Denver, Colo.	16.0	15.5
Phoenix, Ariz.	15.5	16.0
Albuquerque, N. M.	14.5	15.0
Average	16.6	16.8

Western Coast

San Francisco, Calif.	14.0	14.5
Portland, Ore.	14.5	15.0
Seattle, Wash.	14.5	15.0
Average	14.3	14.8

Trend of Gasoline Service Station Prices, Exclusive of Taxes, in 50 Representative Cities Throughout the United States



by geographical grouping shows that in 25 of the 50 cities the gasoline consumer was paying more for his gasoline of January 1, 1938, than on the preceding January 1. In 22 cities the price on January 1, 1938, was lower than on the same date in 1937, and in three cities the price was the same. The city having the highest station price in effect at the close of 1937 was Boise, Idaho, where a price of 25.5 cents per gallon, including a 6-cent tax, was in effect. The lowest price in effect, 15.9 cents, was at Wichita, Kans. Washington, D. C., was a close second with a price of 16.0 cents per gallon.

The Western Coast group of cities, comprised of San Francisco, Portland and Seattle, shows the greatest increase in price during the year. The service-station market in that section was extremely stable all through 1937, and after the one-half cent increase in March there were no further changes. Heavy shipments of crude and products to the Orient had much to do with the stable price structure in California.

The central group of cities was the only one to show a decrease, the average of the 17 cities declining from 13.8 cents per gallon on January 1, 1937, to 13.5 cents on January 1, 1938. Unlike on the Pacific Coast where no price wars have taken place since April, 1936, this area was the scene of much price cutting.

The Midwestern, and Atlantic and New England sections showed slight increases in price in comparison with those of a year ago, while in the southeastern area the prices were identical for the two dates.

Year by year the petroleum industry has seen an almost steadily mounting tax on gasoline, and 1937 was no exception. Four states during the year advanced their tax on gasoline. In each instance the amount was 1 cent per gallon, and as a result the average for the 50 cities on January 1, 1938 (including federal tax and local taxes) was 5.42 cents per gallon or .10 cent higher than at that time in 1937. The four states advancing taxes were Minnesota, New York, Rhode Island and West Virginia.

Gasoline Service Station Prices in Effect During 1937, Exclusive of Taxes, in 50 Representative Cities, with Price Changes and Dates

Gasoline taxes in effect January 1, 1937, and January 1, 1938

	Price Jan. 1, 1937	Price changes in first six months				Price changes in second six months				Price Jan. 1, 1938	Tax Jan. 1, 1937	Tax Jan. 1, 1938
Birmingham, Ala.	15 0	3/8 14 0	5/19 15 0	6/2 14 0	6/25 12.5	8/2 15.0	10/2 13.0	11/8 15.0	....	15.0	8.0	8.0
Phoenix, Ariz.	15 5	3/23 16 0	....	....	....	....	....	....	....	16 0	6 0	6.0
Little Rock, Ark.	13 5	1/11 12 5	1/25 13 5	2/1 14.0	....	7/13 14 5	11/16 13.75	....	....	13.75	7.5	7.5
San Francisco, Calif.	14 0	3/23 14 5	....	....	....	....	....	....	....	14.5	4.0	4.0
Denver, Colo.	16 0	2/22 16 5	....	....	....	11/8 15 5	....	....	....	15 5	5.0	5 0
Hartford, Conn.	12 6	2/6 13 1	4/2 14.1	....	....	8/27 13 6	11/2 13.1	....	....	13.1	4.0	4.0
Washington, D. C.	12 5	2/1 13 0	....	....	....	7/13 13 5	1/17 13 0	....	....	13.0	3 0	3.0
Dover, Del.	12 5	2/4 13 0	5/10 12.5	....	....	7/14 13 0	....	....	....	13.0	5.0	5.0
Jacksonville, Fla.	13 0	2/15 13 5	....	....	....	10/15 13 0	....	....	....	13.0	8.0	8.0
Atlanta, Ga.	15 5	2/8 16 0	3/27 15 0	6/10 16 '	....	9/20 15 0	....	....	....	15.0	7.0	7.0
Boise, Idaho	18 5	2/22 19 0	4/8 19 5	.	....	....	....	....	....	19 5	6.0	6 0
Chicago, Ill.	13 2	2/17 13 5	6/9 13 0	...	....	11/3 12 7	11/17 12 8	....	....	12.8	4.0	4.0
Peoria, Ill.	13 7	2/17 14 0	6/9 13 5	....	....	11/3 13 2	11/17 13.3	....	....	13 3	4.0	4.0
Indianapolis, Ind.	14 4	2/17 14 7	6/9 14 2	....	....	11/3 13 9	....	....	....	13 9	5.0	5.0
Des Moines, Iowa	13 5	2/17 13 8	6/9 13 3	....	....	11/3 13 0	11/17 13.1	....	....	13.1	4.0	4.0
Wichita, Kans.	12 6	2/17 12 9	6/9 12 4	....	....	11/2 11.9	....	....	....	11.9	4.0	4.0
Louisville, Ky.	14.0	2/15 14 5	5/5 15.0	....	....	11/4 14 0	....	....	....	14.0	6.0	6.0
New Orleans, La.	13 0	2/1 13 5	....	....	....	7/13 14 0	11/15 13 25	....	....	13.25	10.0	10.0
Portland, Me.	13.3	2/6 13 8	4/1 14 3	....	....	7/21 13 7	10/20 13 8	11/2 13.3	12/23 13.0	13 0	5 0	5 0
Baltimore, Md.	12 5	2/1 13 0	....	....	....	7/13 13 5	11/25 12 75	....	....	12.75	5.0	5.0
Springfield, Mass.	12 8	2/6 13 3	4/2 14 3	....	....	8/6 13 8	8/26 12.8	12/24 13.0	....	13.0	4.0	4.0
Detroit, Mich.	12.5	2/2 13.1	5/12 13 4	....	....	11/3 13.1	....	....	....	13.1	4.0	4 0
Duluth, Minn.	14.5	2/17 14 8	6/9 14 3	....	....	11/3 14.0	....	....	....	14.0	4.0	5 0
Minneapolis, Minn.	14 1	2/17 14 4	6/9 13.9	....	....	11/3 13.6	11/17 13 7	....	....	13.7	4.0	5.0
Jackson, Miss.	15.0	....	....	....	....	10/12 14 0	....	....	....	14 0	7 0	7.0
Kansas City, Mo.	13.1	2/17 13 4	6/9 12 9	....	....	11/3 12 6	....	....	....	12 6	4 0	4.0
Helena, Mont.	18.5	2/1 19 0	2/22 19 5	....	....	11/13 18 0	11/22 17 5	....	....	17 5	6.0	6.0
Omaha, Nebr.	14 1	2/17 14 4	6/9 13 9	....	....	11/3 13.6	11/17 13.7	....	....	13.7	6.0	6.0
Reno, Nev.	15.5	3/23 16 0	....	....	....	....	....	....	....	16.0	5.0	5.0
Newark, N. J.	12 0	2/1 12 5	2/10 12 0	3/12 11 5	5/26 12.5	7/13 13.0	11/15 12 25	....	....	12.25	4.0	4 0
Albuquerque, N. Mex.	14.5	2/22 15 0	....	....	....	....	....	....	....	15 0	6.5	6 5
New York, N. Y.	13.0	2/6 13.5	6/3 14.0	....	....	11/2 13.5	....	....	....	13.5	4.0	5 0
Charlotte, N. C.	14.9	2/1 15.4	....	....	....	7/13 15.9	11/15 15.15	....	....	15.15	7.0	7.0
Fargo, N. D.	15.1	2/17 15 4	6/9 14 9	....	....	11/3 14 6	11/17 14 7	....	....	14.7	4.0	4.0
Cleveland, Ohio	14.5	2/6 15 0	3/15 14 5	....	....	11/4 14 0	11/24 13.5	....	....	13.5	5.0	5 0
Tulsa, Okla.	15.0	2/18 15 5	2/24 14.0	...	....	....	....	....	....	14.0	5.0	5.0
Portland, Ore.	14 5	3/23 15 0	....	....	....	....	....	....	....	15.0	6.0	6 0
Philadelphia, Pa.	12.5	....	....	....	....	7/16 13.0	9/2 12.5	11/22 12.25	12/9 11.75	11.75	5 0	5.0
Providence, R. I.	12.3	2/6 13 0	4/2 13.'	6/11 12.5	....	7/15 13 5	11/2 13 0	12/24 12.8	....	12.8	3 0	4 0
Charleston, S. C.	13.5	2/1 14 0	....	....	....	7/13 14.5	11/15 13.75	....	....	13.75	7.0	7 0
Huron, S. D.	14 6	1/9 14 5	2/17 14.8	6/9 14.3	....	11/3 14 0	11/17 14 1	....	....	14.1	5.0	5 0
Memphis, Tenn.	14 0	2/1 14 5	....	....	....	7/13 15 0	11/15 14 25	....	....	14.25	8.0	8 0
Dallas, Tex.	12.0	2/1 13 0	....	....	....	10/22 13 5	....	....	....	13.5	5.0	5 0
Salt Lake City, Utah	18 0	2/22 18 5	....	....	....	....	....	....	....	18.5	5.0	5.0
Burlington, Vt.	13.4	2/6 13.9	4/1 14.4	....	....	11/2 13.9	12/24 13.0	....	...	13.0	5.0	5.0
Norfolk, Va.	13.5	2/1 14 0	....	....	....	7/13 14 5	11/15 13.75	....	....	13.75	6.0	6.0
Seattle, Wash.	14 5	3/23 15 0	....	....	....	....	....	....	....	15.0	6.0	6.0
Charleston, W. Va.	14 3	2/1 14 8	....	....	....	7/13 15 3	11/15 14 55	....	....	14.55	5.0	6 0
Milwaukee, Wis.	14 0	2/17 14 3	6/9 13 8	....	....	11/3 13 5	....	....	....	13.5	5.0	5 0
Casper, Wyo.	16.5	2/22 17.0	....	....	....	11/8 16 0	....	....	....	16 0	5.0	5.0
Average price	14.09	....	....	....	....	....	....	....	....	14 08	5 32	5 42

Annual Review

DEEP SAND DISCOVERIES IN WYOMING; EXTENSIONS IN NEW MEXICO

By T. R. INGRAM

The Rocky Mountain fields, in Montana, Wyoming, Colorado, Utah and New Mexico, could not offer many new pools at the close of 1937, but some important discoveries and sizeable extensions were made in all five states, supplying new oil and gas reserves. New pay sands were opened up in old pools. Wyoming led in the number of discoveries.

NEW MEXICO

The principal activity in New Mexico continued to be in Lea County, and in that county 568 units, of 40 acres each, or 22,720 acres, were brought into production. At the end of 1937 there were 1,619 units, or approximately 64,760 acres, on production in the county.

As of Feb. 1, 1937, the Conservation Commission gave official recognition to several pools discovered in 1935 and 1936 which prior to that time had been carried under the Eunice, Cooper and Jal operations. This action reduced the number of units credited to those pools correspondingly and for comparative purposes to show the results of Lea County drilling in 1937 the figures used here are based on the schedules beginning Feb. 1.

The Vacuum Area, 24 miles to the northwest of the Hobbs pool, in the north central part of Lea County, was one of the new developments to attract attention. This was a discovery in 1928 when the Vacuum Oil Co. drilled its No. 1 State C section line, between sections 13 and 14-17s-34e. It had oil at 4,563-66 and 4,606-12 feet and pumped 120 bbls. initially. While this well was produced, there was no additional drilling until 1937. In May, 1937 the Magnolia Petroleum Co. completed its No. 1-G State, NW NW NE section 24-17s-34e, half a mile southeast of the discovery. It had sulfur water at 4,896-4,905 feet. It plugged back to complete at 4,794 feet, where it swabbed 167 bbls. in 24 hours and pumped 268 bbls. initially. It was acidized with 6,000 gallons. In September the same company No. 2 State-Bridges, C SW SE section 14-17s-34e, half a mile to the southwest of the discovery, had the pay at 4,562-93 feet and flowed 582 bbls. of oil through the casing in 24 hours with the tools in the hole. After recovering tools it made 51 bbls. in one hour with 3,000,000 feet of gas. In October, the Phillips Petroleum Co. No. 1 Lea, C NW NW section 30-17s-34e, five miles to the southwest of the discovery, had sulfur water at 4,952 feet plugged back to 4,762 feet and abandoned at that depth after failing to recover any production. In December, the Texas Co. No. 1-L State, C SW NE section 1-18s-34e, three miles to the south of the discovery, was completed at 4,497 feet for 25 bbls. an hour on a 12-hour test, with 3,000,000 feet of gas. At the end of the year four wells were drilling.

NEW MEXICO FIELD DISCOVERED DURING 1937

Field—	County—	Location—	Discovery well—	Date—
Vacuum	Lea	Tws. 17-18r. 34-35e	Magnolia Petroleum Co.	September

Northwest of Lynn Pool

A discovery was made in January which opened for

NEW MEXICO

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
ARTESIA-MALJAMAR-JACKSON:													
Daily average	3,206	3,655	3,301	3,488	5,593	5,495	5,999	5,518	7,568	6,823	7,269	7,273	
Month	99,398	102,340	102,340	104,646	173,390	164,839	185,961	171,056	227,052	211,512	218,071	225,471	1,986,076
AZTEC:													
Daily average	.....	.....	.....	.....	.....	.....	7	6	6	6	6	6	
Month	.....	.....	.....	.....	.....	.....	218	172	184	180	186	194	1,134
COOPER:													
Daily average	6,807	6,954	6,951	6,687	6,658	6,606	6,041	5,836	6,000	5,352	4,963	4,988	
Month	211,025	194,714	215,473	200,608	206,386	198,187	187,262	180,870	180,007	165,927	148,901	154,628	2,243,988
EAVES:													
Daily average	767	1,070	1,086	1,059	1,095	1,092	1,072	1,087	1,140	1,058	1,063	1,056	
Month	23,765	29,967	33,663	31,771	33,953	32,760	33,232	33,703	34,209	32,786	31,890	32,727	384,426
EUNICE:													
Daily average	28,143	29,107	30,383	31,138	31,974	36,113	32,726	30,991	30,585	27,786	27,025	27,101	
Month	872,446	814,990	941,867	934,143	991,209	1,083,402	1,014,511	960,709	917,563	861,372	810,765	840,140	11,043,117
HARDY:													
Daily average	444	662	605	704	827	821	898	1,028	1,133	1,079	1,198	1,190	
Month	13,777	18,545	18,770	21,119	25,628	24,631	27,833	31,883	33,983	33,437	35,940	36,890	322,436
HOBBS:													
Daily average	21,626	21,955	22,809	21,866	21,792	21,537	19,982	19,510	19,042	16,818	16,270	17,284	
Month	670,421	614,733	707,072	655,986	675,561	646,119	619,483	604,810	571,267	521,364	488,101	535,796	7,310,713
HOGBACK:													
Daily average	199	183	166	224	181	207	204	101	199	191	233	217	
Month	6,176	5,136	5,136	6,707	5,607	6,210	6,316	3,138	4,977	5,927	6,977	6,730	70,037
JAL:													
Daily average	1,326	1,276	1,229	1,161	1,251	1,266	1,234	1,227	1,170	1,106	1,185	1,160	
Month	41,121	35,740	38,106	34,819	38,779	37,988	38,241	38,032	35,105	34,288	35,550	35,949	443,718
LANGLIE:													
Daily average	951	985	1,060	1,173	1,385	1,309	1,510	1,787	2,232	2,211	2,410	2,452	
Month	29,490	27,579	32,864	35,200	42,933	39,270	46,818	55,396	66,949	68,546	72,290	76,014	593,349
LYNCH:													
Daily average	959	935	983	964	946	960	901	834	833	734	714	717	
Month	29,737	26,175	30,475	28,929	29,335	28,792	27,940	25,852	25,007	22,745	21,408	22,227	318,622
LYNN:													
Daily average	.....	162	142	198	282	291	363	379	287	318	349	347	
Month	.....	4,526	4,405	5,931	8,727	8,733	11,260	11,747	8,612	9,865	10,465	10,757	95,028
MATTIX:													
Daily average	709	816	861	1,096	1,227	1,235	1,519	1,714	1,861	1,898	2,064	2,059	
Month	21,969	22,853	26,697	32,880	38,041	37,056	47,096	53,110	55,822	58,833	61,927	63,838	520,122
MONUMENT:													
Daily average	20,018	26,030	26,756	30,923	32,308	32,804	32,886	32,897	33,325	30,943	30,447	31,115	
Month	620,563	728,842	829,441	927,698	1,001,551	984,133	1,019,477	1,019,803	999,755	959,238	913,414	964,570	10,968,485
OSWELL:													
Daily average	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Month	220	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	220
PENROSE:													
Daily average	1,111	1,220	1,444	1,587	1,659	1,662	1,815	2,752	2,735	3,322	3,506	3,490	
Month	34,441	34,168	44,762	47,610	51,423	49,869	56,271	85,307	82,059	102,988	105,187	108,182	802,267
RATTLESNAKE:													
Daily average	783	813	735	793	622	650	832	764	857	827	816	818	
Month	24,281	22,775	22,775	23,776	19,287	19,491	25,803	23,688	25,719	25,647	24,467	25,352	283,061
RHOADES:													
Daily average	78	89	66	53	54	61	67	97	117	109	120	119	
Month	2,423	2,487	2,053	1,575	1,659	1,832	2,089	2,997	3,510	3,390	3,609	3,680	31,304
SKELLY:													
Daily average	645	756	914	888	931	910	975	1,174	1,509	1,664	1,523	1,534	
Month	19,982	21,164	28,336	26,646	28,861	27,288	30,226	36,381	45,279	51,599	45,712	47,562	409,036
SOUTH EUNICE:													
Daily average	665	1,028	1,027	1,068	1,192	1,187	1,710	1,862	2,299	2,171	2,314	2,326	
Month	20,622	28,773	31,836	32,053	36,965	35,616	53,021	57,736	68,962	67,311	69,421	72,097	574,413
TABLE MESA:													
Daily average	73	1	1	135	106	130	104	87	81	77	86	88	
Month	2,272	22	22	4,057	3,286	3,890	3,219	2,693	2,421	2,388	2,578	2,741	29,589
VACUUM:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	69	80	77	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,152	2,400	2,379	6,931
Daily average	88,520	97,697	100,519	105,205	110,083	114,337	110,848	109,648	112,981	104,564	103,642	105,417	105,310
Total 1937	2,744,129	2,735,529	3,116,093	3,156,154	3,412,581	3,430,106	3,436,277	3,399,083	3,389,442	3,241,495	3,109,259	3,267,924	38,438,072
Total 1936	1,865,049	1,838,608	2,097,447	2,055,198	1,303,441	2,183,776	2,235,797	2,329,632	2,251,558	1,510,447	2,469,218	2,506,288	26,647,459
Total 1935	1,627,833	1,379,563	1,599,331	1,535,989	1,626,572	1,660,519	1,802,167	1,797,597	1,734,400	1,806,363	1,773,725	1,810,262	20,154,321
Total 1934	1,285,867	1,129,208	1,277,794	1,370,695	1,407,997	1,380,044	1,452,055	1,515,828	1,428,202	1,416,231	1,369,447	1,405,510	16,438,878
Total 1933	995,813	1,020,824	1,148,674	1,065,030	1,092,719	1,063,290	1,155,194	1,189,889	1,227,240	1,299,334	1,253,640	1,289,631	13,801,278

development considerable territory to the northwest of the Lynn pool and southwest of the Eunice pool in the Continental Oil Co. No. 1 Farney, C SW SE section 5-23s-36e. It flowed 912 bbls. naturally through a three-fourths-inch choke on the tubing in 24 hours from lime at 3,750-55 feet at a total depth of 3,760 feet. On a 14-minute drill-stem test at 3,704 feet it showed 1,080 feet of oil and 580,000 feet of gas. The Continental and California companies in a joint test in April completed a south offset in their No. 1 Danciger, C NW NE section 8-23-36, which made 43 bbls. per hour, natural flow, from lime at 3,732-70 feet, and in July same companies completed a north offset in No. 2-A Farney, C NE SE section 5-23-36, which flowed 201 bbls. of oil and 86 bbls. of water through a choke on the tubing with 1,960,000 feet of gas. Total depth was 3,785 feet and it plugged back to 3,796 feet and acidized.

NEW MEXICO

Completions by Counties

County—	Comp.	Prod.	Dry	Gas
Lea	576	533,778	28	21
Eddy	60	7,762	17	2
Roosevelt	3	0	3	0
Chaves	2	0	2	0
McKinley	3	0	3	0
San Juan	15	321	9	0
Torrance	1	0	1	0
Valencia	1	0	1	0
Miscellaneous	4	0	0	4
Total 1937	665	541,861	64	27

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	56	37,968	8	1
February	34	44,075	6	2
March	55	52,419	1	2
April	69	91,142	5	1
May	61	63,925	2	0
June	74	65,760	7	5
July	62	43,632	11	2
August	49	28,277	6	3
September	65	50,048	7	7
October	37	13,969	3	1
November	51	21,306	7	1
December	52	29,340	1	2
Total 1937	665	541,861	64	27
Total 1936	552	548,835	47	17
Difference	113	6,974	17	10

Another outpost well was drilled in this same general area in the Continental Oil Co. No. 1 Stevens, C SW NW section 34-23s-36e, three miles to the southwest of the above mentioned wells, and northwest of the Cooper pool. It had the top of the pay at 3,185 feet and drilled to 3,691 feet. It then plugged back to 3,600 feet and was completed for 62,500,000 feet of gas per day, open flow.

A wildcat discovery near the Texas boundary and east of the Monument field was made in April in the Continental Oil Co. and California Co. No. 1 Skaggs, C NE SE section 24-20s-37e, in lime at 3,900 feet, total depth. It made 21 bbls. an hour and 500,000 feet of gas after acidizing with 4,500 gallons. In June the same companies completed an offset on the east in their No. 1 Burger, C NW SW section 19-20s-38e, at 3,886 feet. Top of the pay was at 3,700 feet. After acidizing and shooting it made 52 bbls. in 12 hours through a three-fourths-inch choke on the tubing.

COLORADO

Drilling operations in Colorado in 1937 were confined almost altogether to wildcat or semiwildcat wells and these resulted in one important discovery in the opening of a new pool on the Wilson Creek structure in Rio Blanco County, a slight extension of the proven area in the Powder Wash field in Moffat County and the establishing of the productive limits of the Gramps pool in Archuleta County.

The Wilson Creek discovery was made in the joint operation of the Texas Co. and the California Co. in their No. 1 Unit, SW SE NW section 35-3n-94w. The well began spudding on July 1 and late in December encountered production in the Morrison formation. It topped a sand at 6,664 feet and cored 17 feet of good saturation and 80 feet of fair saturation in that formation. Drill stem tests showed for 60 bbls. an hour of green oil of paraffin base with a gravity of 46.5 degrees. Coring then continued to the Sundance and saturation in that horizon was picked up at 6,824 feet. The hole was then carried to a total depth of 6,918 feet. It cored 74 feet of fully saturated Sundance from 6,824 to 6,898 feet. From that depth to the bottom there was no oil saturation but a little water. The well is not yet a completion and no figures have been released on drill stem tests in the Sundance. It is planned to plug off the bottom water, set casing on top of the Sundance, perforate it opposite the saturated Morrison sand and produce the well at present from that horizon. Rotary table elevation is 8,051 feet.

The structure is a large one and composed entirely of government land operated under a unit agreement. The estimated closure is 900 feet with around 16,000 acres inside the closing contour. The two companies drilling the discovery control the entire structure. The field is in Rio Blanco County, 60 miles east of the Utah line and 20 to 30 miles south and west of the Iles and Moffat pools in Moffat County, both of which produce from the Sundance.

The Powder Wash field in Moffat County, near the Wyoming line and east of the Hiawatha gas field, had a slight extension of the proven area. This field previously had been proven for gas in one well, Mountain Fuel Supply Co. No. 1 Musser, C NE section 5-11n-97w. Late in 1936 an oil discovery was made in the same company's No. 1 Allen, NE SW SE section 32-12n-97w, which produced 285 bbls. of 39.9 gravity oil with 3,000,000 feet of gas, 1,540 pounds pressure, in 6 hours in the Wasatch formation at 5,032 feet. In February, the same company's No. 1 Hal Stewart, C SW SW section 32-12n-97w, half a mile west of the oil discovery, was completed in a sand in the Wasatch at 3,087-3,113 feet for 35 bbls. an hour after flowing 15 hours in the mud pit to clean. It did not go to the horizon productive in the oil discovery.

The Gramps pool, in Archuleta County, which was developed in 1935 and 1936, was limited on the northwest in Lafayette M. Hughes' No. 14 Gramps, SW NW NW section 13-33n-2e, which had hot sulfur water in the Dakota at 2,238-50 feet, and was abandoned. The limits on the southwest were defined in the Prospect Oil Syndicate No. 1-A Garnett, NE NW SW section 25-33n-2e, which was abandoned at 1,515 feet after encountering water in the Dakota. On the north, the Prospect Oil Syndicate No. 2 Garnett, NW SW NE section 13-33n-2e, was abandoned in the Mancos at 1,535 feet when it was found that the structure was dipping 49 degrees in that direction.

COLORADO

Completions by County

County—	Comp.	Prod.	Dry	Gas
Archuleta	5	0	5	0
Bent	1	0	1	0
Boulder	2	0	2	0
Eagle	1	0	1	0
Fremont	2	0	2	0
Kiowa	2	0	2	0
Larimer	2	0	2	0
Las Animas	1	0	1	0
Lincoln	1	0	1	0
Moffat	6	900	2	2
Morgan	1	0	1	0
Pueblo	1	0	1	0
Rio Blanco	2	0	2	0
Total 1937	27	900	23	2
Total 1936	29	8,905	17	1
Difference	2	8,005	6	1

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	2	0	2	0
February	2	840	1	0
March	1	0	1	0
April	1	0	1	0
May	1	0	1	0
June	0	0	0	0
July	1	0	1	0
August	2	60	0	1
September	8	0	7	1
October	3	0	3	0
November	2	0	2	0
December	4	0	4	0
Total	27	900	23	2

WYOMING

There were six discoveries in Wyoming in 1937, one of which was in deeper horizons. Of that number three were gas and three were oil discoveries. There were six extensions of producing pools. The discoveries included a deeper horizon in Lance Creek, a new pool on the Gooseberry dome in Park County, a small discovery in the Shawnee district in Converse County, and three gas pools on the Cherokee Ridge in Sweetwater County, Bunker Hill, in Carbon County, and East Lance Creek, in Niobrara County. Extensions of producing pools included Rock River Sundance horizon in Carbon County, the Tensleep horizon on the Wertz dome in Carbon County, the Madison horizon on the Garland dome in Big Horn-Park counties, the Muskrat gas field in Fremont County and the Hamilton Dome field in Hot Springs County.

The most important of the developments was the

COLORADO FIELD DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Wilson Creek	Rio Blanco	35-3n-94w	Texas and California companies	Dec. 19	1	Morrison	6,725	55

COLORADO

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
CRAIG:													
Daily average	355	398	378	419	404	416	401	390	380	381	404	392	
Month	11,024	11,158	11,720	12,566	12,529	12,476	12,422	12,096	11,408	11,804	12,121	12,150	143,474
FORT COLLINS:													
Daily average	55	57	44	43	35	40	51	45	36	46	24	39	
Month	1,695	1,582	1,377	1,309	1,093	1,192	1,596	1,388	1,084	1,420	725	1,214	15,675
FLORENCE and CANYON CITY:													
Daily average	122	162	182	171	154	162	133	173	149	136	180	166	
Month	3,770	4,544	5,639	5,125	4,777	4,860	4,120	5,358	4,483	4,214	5,403	5,152	57,445
ILES:													
Daily average	2,402	3,031	3,417	3,315	2,576	2,546	2,903	3,075	2,833	2,685	2,654	2,645	
Month	74,458	84,865	105,919	99,440	79,855	76,393	90,002	95,312	85,001	83,241	79,622	82,000	1,036,108
ORCHARD:													
Daily average	.....	.....	3	35	22	28	23	20	23	21	23	21	
Month	.....	.....	96	1,035	687	835	699	631	692	666	677	656	6,674
PRICE (estimated):													
Daily average	.....	.....	.....	.....	785	966	609	535	411	615	657	640	
Month	.....	.....	.....	.....	24,340	29,000	18,877	16,576	12,319	19,075	19,700	19,850	159,737
RANGELY:													
Daily average	83	70	82	80	84	83	73	81	79	78	90	88	
Month	2,571	1,958	2,536	2,406	2,593	2,492	2,250	2,504	2,384	2,411	2,708	2,728	29,541
TOW CREEK:													
Daily average	123	176	150	135	149	141	20	165	155	176	151	161	
Month	3,815	4,937	4,657	4,035	4,618	4,222	6,203	5,107	4,637	5,458	4,543	4,996	57,228
WELLINGTON:													
Daily average	206	216	216	190	174	173	196	224	192	213	190	194	
Month	6,372	6,035	6,699	5,695	5,399	5,188	6,087	6,946	5,764	6,607	5,708	6,009	72,509
Daily average	3,345	4,110	4,472	4,387	4,384	4,555	4,589	4,707	4,259	4,352	4,374	4,347	4,324
Total 1937	103,705	115,079	138,643	131,611	135,891	136,658	142,256	145,918	127,772	134,896	131,207	134,755	1,578,391
Total 1936	102,627	111,012	131,502	154,860	149,978	143,760	139,748	150,102	145,410	151,249	117,240	115,072	1,612,760
Total 1935	109,690	111,743	148,149	146,635	150,325	133,302	129,285	130,789	130,040	129,747	118,031	117,806	1,555,542
Total 1934	88,065	77,836	80,388	75,132	94,308	84,689	106,700	113,937	107,104	97,154	102,058	103,004	1,130,375
Total 1933	83,421	69,356	81,437	66,270	80,848	73,170	78,515	75,040	70,590	76,415	74,910	84,909	914,881

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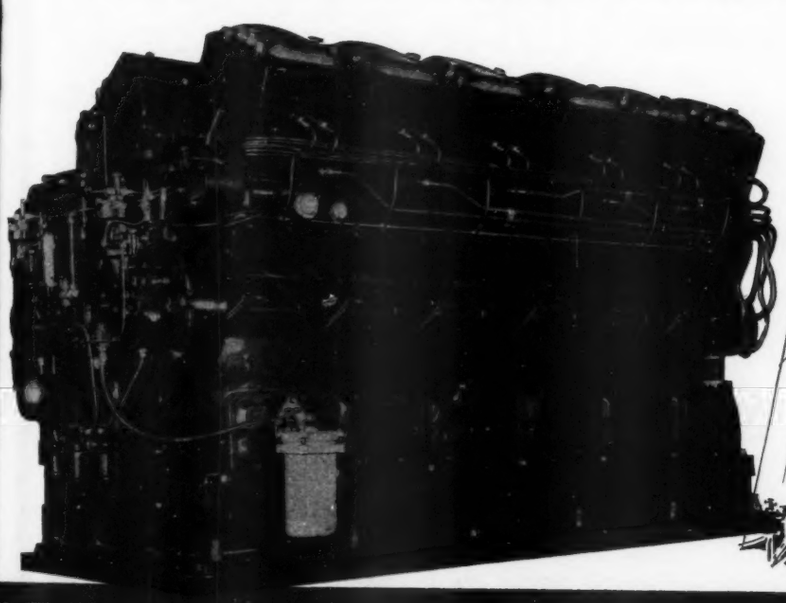

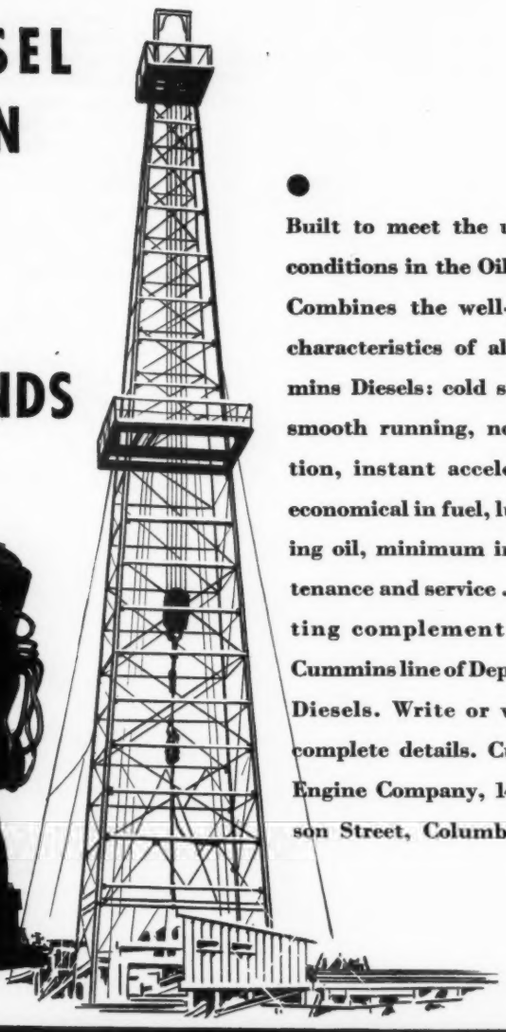

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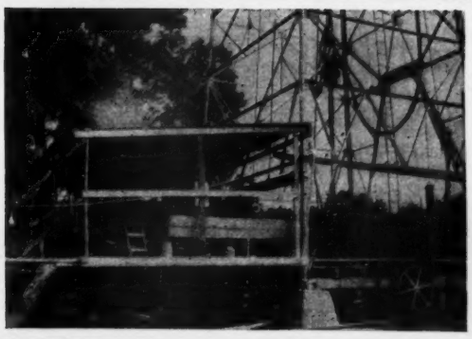

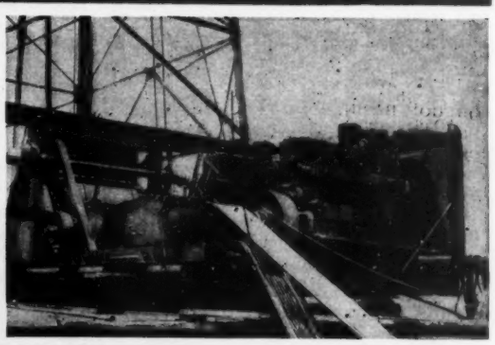

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discovery of a deeper pay in the Lance Creek field in the Minnelusa sand of Pennsylvanian age. Twenty-five wells were completed in that field during the year, of which 14 were in the Sundance and 11 in the Minnelusa. The latter included one dry hole. The Sundance horizon was fully outlined and embraces approximately 2,000 acres. Most of the wells drilled to that horizon were around the edges and several of these were failures, but upon being carried down to the Minnelusa were completed as producers. The Minnelusa sand wells are widely scattered and were located with a view to ascertaining the productive limits of that formation. Results to date indicate around 4,000 acres, or double the Sundance area, will be productive, with the limits defined only on the east and southeast. Some authorities believe that additional drilling will disclose a productive area of close to 5,000 acres.

The discovery in the Minnelusa was actually made in the spring of 1936 in the Ohio Oil Co. No. 5 Converse Sheep, C SE SW section 32-36n-65w, but it was temporarily completed without any information being released as to the depth of production. When the well was opened in December, 1937, for reconditioning, the facts were made public. It made 150 bbls. per day after having stood for more than a year, through the casing from the basal Sundance at 3,702-62 feet and 850 bbls. per day through the tubing from the Upper Minnelusa at 4,452 feet, total depth. Elevation is 4,366 feet.

The possibilities of the new pay were more fully disclosed in June, 1937, when the Ohio Oil Co. completed its No. 5 Leo OPC-16, NW NW SW section 35-36n-65w, two and three-fourths miles to the east and half a mile north of the discovery on the apex of the structure in the Sundance, and 1¾ miles east of the nearest Sundance producer. This well gauged 77 bbls. per hour on a 15-hour test through the tubing from the Middle Minnelusa at 5,516-37 feet, the last also being the total depth. After cleaning out and conditioning it showed for 1,800 bbls. per day of 42 gravity, paraffin base, green oil. The Upper Minnelusa, in which the discovery was made in 1936, had water at 4,935-5,515 feet. The basal Sundance at 4,275-95 feet also carried water. Elevation 4,485 feet.

The next well was a mile to the southeast of the 1936 discovery and on the edge of the Sundance pool in Ohio Oil Co. No. 10 Lamp, Acct. 2, C NE SE section 5-35n-65w. It was completed in September at 5,423 feet for 1,666 bbls. of oil first 22 hours and 1,700,000 feet of gas. Top of saturation was at 5,405 feet and elevation 4,472 feet.

Late in September A. B. Cobb and the Holly Development Co. No. 2 Novick, SE SE SW section 6-35n-65w, was completed at 5,305 feet for 94 bbls. per hour through the tubing on an 8-hour test, with 2,500,000 feet of gas. The sand was at 5,252-73 feet. Elevation 4,436 feet. This well is on the southwest flank four miles from the Ohio No. 5 Leo, and proved that the new horizon was productive on the west side and out beyond the limits of the Sundance pool in that direction, having had water in the Sundance at 3,997-4,096 feet.

In September the Ohio Oil Co. No. 2 Taylor OPC-32, NW NW SW section 3-35n-65w, on the southeast flank, three-fourths of a mile out from the nearest Sundance producer, was plugged and abandoned at 6,214 feet, having encountered no shows of oil or gas. It topped the Minnelusa at 5,568 feet and the Madison at 6,178 feet, having had water in sand at 6,087-6,102 feet.

WYOMING

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
BADGER BASIN:													
Daily average	41	41	210	204	207	203	138	137	252	242	237	256	
Month	1,272	1,150	6,505	6,120	6,426	6,096	4,289	4,250	7,564	7,500	7,100	7,944	66,216
BIG MUDDY:													
Daily average	1,293	1,283	1,436	1,318	1,348	1,336	1,341	1,339	1,354	1,292	1,316	1,072	
Month	40,096	35,931	44,505	39,535	41,787	40,069	41,573	41,505	40,623	40,049	39,467	33,228	478,368
BLACK MOUNTAIN:													
Daily average	61	69	.....	.....	172	82	177	222	202	194	136	182	
Month	1,904	1,930	.....	.....	5,330	2,460	5,496	6,891	6,047	6,025	4,081	5,642	45,806
BYRON:													
Daily average	336	2,447	1,708	1,509	1,153	140	1,054	22	80	2,536	108	2,282	
Month	10,427	68,528	52,945	45,284	35,728	4,212	32,666	690	2,395	78,630	3,253	70,753	405,511
DALLAS DERBY:													
Daily average	482	532	580	550	555	547	552	572	594	560	571	562	
Month	14,936	14,889	17,970	16,488	17,204	16,407	17,115	17,745	17,805	17,345	17,130	17,431	202,465
DUTTON CREEK:													
Daily average	42	44	43	50	47	48	56	50	49	58	56	58	
Month	1,301	1,230	1,345	1,486	1,445	1,447	1,744	1,555	1,478	1,790	1,671	1,800	18,292
ELK BASIN:													
Daily average	357	558	372	582	557	416	234	247	246	250	299	63	
Month	11,079	15,616	11,525	17,446	17,279	12,483	7,245	7,654	7,368	7,738	8,981	1,947	126,361
BIG MEDICINE BOW:													
Daily average	2,430	2,796	2,929	2,790	3,081	2,912	4,381	5,308	4,897	5,188	4,371	4,985	
Month	75,324	78,295	90,785	83,712	95,525	87,363	135,814	164,538	146,922	160,831	131,137	154,529	1,404,775
FRANNIE:													
Daily average	2,043	1,993	1,685	816	482	460	800	826	2,249	1,858	1,584	1,288	
Month	63,343	55,815	52,235	24,493	14,937	13,819	24,797	25,614	67,466	57,610	47,516	39,926	487,571
GRASS CREEK:													
Daily average	1,256	1,962	1,256	2,017	3,387	2,936	1,991	2,313	1,801	1,775	964	492	
Month	38,950	54,944	38,935	60,515	104,990	88,072	61,721	71,717	54,043	55,036	28,908	15,260	673,091
HAMILTON:													
Daily average	747	515	897	1,741	796	1,314	1,486	1,606	1,517	1,464	1,041	.....	
Month	23,146	14,428	27,820	52,240	24,675	39,420	46,073	49,780	45,508	45,394	31,237	.....	399,721
HUDSON:													
Daily average	248	289	356	338	320	236	300	321	318	303	320	310	
Month	7,674	8,105	11,030	10,125	9,931	8,579	9,306	9,938	9,543	9,379	9,593	9,606	112,809
LABARGE:													
Daily average	911	987	1,147	1,092	963	958	988	972	977	1,012	1,062	965	
Month	28,236	27,629	35,555	32,749	29,843	28,736	30,643	30,135	29,317	31,381	31,848	29,921	365,993
LANCE CREEK:													
Daily average	12,020	10,124	11,322	13,254	12,579	11,944	10,602	10,970	12,470	11,240	13,398	11,100	
Month	372,612	283,480	350,990	397,614	389,965	358,322	328,662	340,066	374,088	348,442	401,947	344,113	4,290,301
LOST SOLDIER:													
Daily average	1,040	1,019	1,130	1,202	1,114	1,186	1,214	1,496	1,398	1,421	1,477	1,333	
Month	32,040	28,529	35,040	36,066	34,536	35,574	37,632	46,379	41,942	44,045	44,302	41,311	457,396
OREGON BASIN:													
Daily average	2,560	3,279	2,787	2,765	2,546	2,581	6,063	7,834	7,333	3,967	2,167	3,527	
Month	79,365	91,805	86,400	82,946	78,920	77,430	187,968	242,858	219,987	122,963	65,010	109,337	1,444,989
OSAGE:													
Daily average	645	737	880	750	889	806	736	723	817	764	801	767	
Month	20,000	20,650	27,288	22,495	27,583	24,182	22,806	22,407	24,500	23,694	24,040	23,780	283,425
POISON SPIDER:													
Daily average	214	229	227	246	295	294	322	492	376	333	290	317	
Month	6,635	6,414	7,035	7,383	9,144	8,811	9,972	15,247	11,268	10,324	8,693	9,822	110,748
ROCK RIVER:													
Daily average	1,287	1,828	2,909	1,238	1,167	1,248	1,396	2,122	2,320	2,516	2,828	3,092	
Month	39,909	51,196	90,166	37,125	36,190	37,444	43,288	65,774	69,592	78,007	84,831	95,861	729,383
SALT CREEK:													
Daily average	14,624	16,932	18,519	17,081	16,280	16,216	15,729	15,620	15,881	16,314	16,406	16,176	
Month	453,336	474,099	574,098	512,420	504,669	486,494	487,600	484,224	476,516	505,725	492,178	501,462	5,952,821
HIDDEN DOME:													
Daily average	427	528	352	467	360	426	356	347	340	320	210	292	
Month	13,249	14,785	10,919	14,000	11,160	12,780	11,036	10,757	10,200	9,921	6,306	9,040	134,153
MIDWAY:													
Daily average	8	.....	12	22	32	21	19	12	62	47	360	70	
Month	250	.....	365	670	993	632	590	376	1,863	1,457	1,079	2,166	10,441
TEAPOT:													
Daily average	14	19	19	23	18	19	14	17	25	21	21	25	
Month	435	540	577	690	560	563	435	538	736	639	624	771	7,108
QUEALY DOME:													
Daily average	652	648	602	583	801	672	807	806	696	716	874	756	
Month	19,997	18,148	18,668	17,480	24,826	20,167	25,015	24,991	20,869	22,201	26,210	23,447	262,019
WAUGH DOME:													
Daily average	209	329	317	294	274	273	259	164	.....	40	248	93	
Month	6,477	9,214	9,840	8,807	8,480	8,192	8,024	5,083	.....	1,250	7,446	2,883	75,696
GARLAND:													
Daily average	2,183	2,238	2,142	2,537	2,571	2,858	2,062	1,869	2,082	2,708	2,497	2,085	
Month	67,658	62,680	66,414	76,111	79,686	85,728	63,926	57,950	62,448	83,940	74,896	64,637	846,074
MULE CREEK:													
Daily average	.....	.....	.....	.....	.....	.....	197	410	199	.....	.....	.....	
Month	.....	.....	.....	.....	.....	.....	6,115	12,718	5,965	.....	.....	.....	24,798
WERTZ:													
Daily average	.....	.....	.....	.....	.....	.....	129	297	307	332	437	382	
Month	.....	.....	.....	.....	.....	.....	3,989	9,206	9,220	10,279	13,120	11,850	57,664
SOUTH CASPER CREEK:													
Daily average	.....	.....	.....	.....	.....	.....	469	509	505	513	502	504	
Month	.....	.....	.....	.....	.....	.....	14,531	15,750	15,154	15,903	15,049	15,632	92,019
MISCELLANEOUS:													
Daily average	250	67	20	487	677	616	20	46	36	43	40	40	
Month	7,750	1,891	620	14,595	21,000	18,480	620	1,417	1,087	1,319	1,188	1,237	71,204
Daily average	46,374	51,497	53,857	54,287	52,349	50,799	53,893	57,673	59,592	58,026	54,295	53,075	53,801
Total 1937	1,437,401	1,441,921	1,669,575	1,618,595	1,632,815	1,523,962	1,670,691	1,787,753	1,781,514	1,798,817	1,628,841	1,645,336	19,637,218
Total 1936	1,062,556	972,486	1,153,448	1,081,830	1,124,370	1,059,420	1,204,443	1,243,875	1,275,150	1,332,256	1,427,400	1,331,605	14,268,839
Total 1935	1,028,439	936,981	1,019,743	1,118,852	1,084,698	1,160,513	1,097,308	1,222,012	1,182,983	1,136,513	1,083,110	1,166,613	13,237,765
Total 1934	895,359	872,848	972,970	936,548	1,111,533	1,013,668	1,156,279	1,183,686	1,063,429	1,132,993	1,080,162	1,069,520	12,488,995
Total 1933	979,290	855,568	968,750	898,860	934,960	899,850	967,959	952,436	923,370	910,935	889,530	914,221	11,095,729

Elevation 4,407 feet. This well limited the productive area on the southeast.

In December, the Ohio Oil Co. No. 1 Leo OPC-7, NW NW SE section 35-36n-65w, half a mile east of No. 5 Leo, the nearest Minnelusa producer, was completed at 5,641 feet for 14 bbls. of oil and 38 bbls. of water per day on the pump. Top of Minnelusa was at 5,630 feet. This appears to be the eastern edge of the Minnelusa pool.

Early in December the Minnelusa Oil Co. No. 1-A Lamb, CWL SE SW section 27-36n-65w, on the north side, half a mile out from the nearest Sundance sand well, was completed at 5,470 feet as a flowing well, making 450 bbls. per day initially. It topped Minnelusa at 5,421 feet and saturation at 5,448 feet. Elevation 4,410 feet. It was a failure in the Sundance topped at 4,040 feet. This proved the north side beyond the Sundance for Minnelusa production.

At the close of the year the Continental Oil Co. No. 8 Otto Rohlff, SE SW SE section 31-36n-65w, an outside well on the northwest side of the Sundance pool was completed in the Minnelusa at 5,139-5,242 feet for 650 bbls. per day after acidizing with 1,000 and 2,000 gallons. Elevation 4,410 feet. It was a failure in the Sundance.

The above wells outlined the present productive area for the Middle Minnelusa. Three other Minnelusa wells completed were within the limits as above outlined.

Gas Discovery in Lance Creek

A discovery of gas was made in the East Lance Creek field by Continental Oil Co. No. 1 Leach, SW NE NE section 29-36n-64w, five miles to the east and north of the nearest Sundance producer and 3½ miles northeast of the nearest Minnelusa producer in Lance Creek. It tested all horizons in the Pennsylvanian down to 6,434 feet, finding water in the Sundance sands and Minnelusa sands down to the top of the Madison. No sand record was given out, but in December it was plugged back and completed in the Dakota at 3,808-95 feet for 8,484,000 feet of gas per day.

WYOMING

Completions by County

County—	Comp.	Prod.	Dry	Gas
Albany	16	3,010	4	2
Big Horn	12	6,577	3	0
Carbon	16	6,190	7	3
Converse	3	50	1	1
Fremont	2	0	1	1
Goshen	1	0	1	0
Johnson	1	0	1	0
Laramie	1	0	1	0
Natrona	3	365	0	0
Niobrara	28	22,857	5	1
Park	5	1,260	0	1
Sheridan	1	0	1	0
Sublet	3	130	0	0
Sweetwater	5	0	2	3
Washakie	12	245	6	0
Weston	18	65	10	0
Total 1937	127	40,745	43	12
Total 1936	131	63,750	35	8
Difference	4	23,005	8	4

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	6	2,910	1	0
February	9	4,412	3	0
March	14	4,768	7	0
April	5	4,862	0	0
May	13	5,769	4	1
June	6	2,807	0	2
July	12	1,055	6	1
August	13	739	5	2
September	15	5,476	6	2
October	9	3,608	4	1
November	13	2,607	3	2
December	12	1,732	4	1
Total	127	40,745	43	12

Black Oil Discovered

A black oil discovery was made on the Gooseberry Structure in Park County, in July, in General Petroleum Corp. No. 1 Government, NW NW NW section 33-47n-100w. It was drilled to 6,076 feet and had water in the Amsden, topped at 6,070 feet. It plugged back to test the Tensleep at 5,903-70 feet, which showed some oil in the top and water at the bottom. After considerable difficulty it was completed for 300 bbls. per day at 5,903-96 feet after being shot and acidized. It had small production in the Embar, which was cased off with the 9⅝-inch at 5,686 feet. It proved up around 120 acres and is the only producer drilled on the structure. Elevation 6,289 feet.

The Mountain Fuel Supply Co. brought in a small gas field at a shallow depth on the Cherokee Ridge anticline in Sweetwater County in its No. 1-A Williams, C NE NE section 5-12n-95w, northeast of the Powder Wash oil and gas field on the Colorado side of the boundary. It ran into a gas pocket at 350 feet and rig was burned down. After rebuilding rig the 10-inch was cemented at 348 feet and the hole drilled to 540 feet where it was completed for 2,160,000 feet a day.

The Ohio Oil Co. made a gas discovery on the Bunker Hill Structure in Carbon County in September in its No. 1 Wyoming Oil & Gas Co. C SE SW section 29-27n-89w. It was completed at 1,488 feet for 5,000,000 feet per day from the Shannon sand at 1,224-1,480 feet.

A small oil discovery in the Shawnee district in Converse County was made in the Wyoming Southern Oil Co. No. 1 Jennie Evert, NW NW SW section 26-32n-69w, which had 270 feet of oil standing in the hole at 560 feet when completed in June. The oil is believed to be coming from the contact between the Tertiary and Upper Cretaceous.

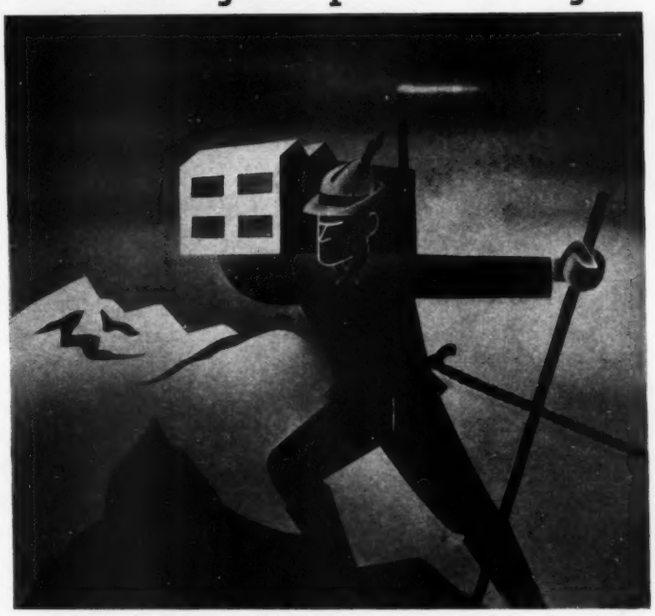
One of the most important extensions of proven territory was in the Garland field in Big Horn-Park counties in the Kinney-Coastal Oil Co. No. 3 Government, SW NW NE section 24-56n-97w. This was an old well deepened from the Tensleep at 4,234 feet, total depth, which was drilled down to 4,749 feet and completed in August in the Madison at 4,482-4,650 feet for 15 bbls. of black oil per hour with 5,000,000 feet of gas per day, after acidizing with 1,000 gallons. The well is 2½ miles northwest of the nearest Madison lime producer and proved up about 500 acres for the Kinney-Coastal and other companies at the north end of the field. Should the Madison prove productive down to this contour around the structure it may bring into production close to 2,000 acres for that horizon.

The Hamilton Dome black oil field in Hot Springs County was extended three-fourths of a mile to the northwest in the Tensleep in the Italo Petroleum Corp. No. 1 Phebus-Government, NW NW SW section 11-44n-98w, which was completed late in December for 250 bbls. per day from the Tensleep at 3,206-46 feet.

The Muskrat gas field in Fremont County was extended one and one-half miles to the southeast in the Sinclair-Wyoming Oil Co. No. 2-C Muskrat, NE SW SW section 1-33n-92w. This was a deep test and at the end of 1936 it was classed as an oil discovery in the Embar at 7,268-93 feet when it had considerable oil in the hole. It was shut down for the winter with the bailer in the hole. Upon being acidized and tested in June it failed to respond favorably and the hole was deepened to 8,112

(Continued on Page 82)

HOW to CLIMB an ALP and take your plant with you



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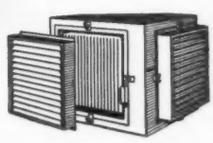

Attached to the intake of air compressors and engines, the Coppus Air Filter provides clean air, free from abrasive dust particles (Bulletin F-310-3).

Improving working conditions, reducing dust-caused maintenance, protecting product purity, for recovering valuable air-borne substances, — the Coppus Unit-Type Air Filter. (Bulletin F-320-4).

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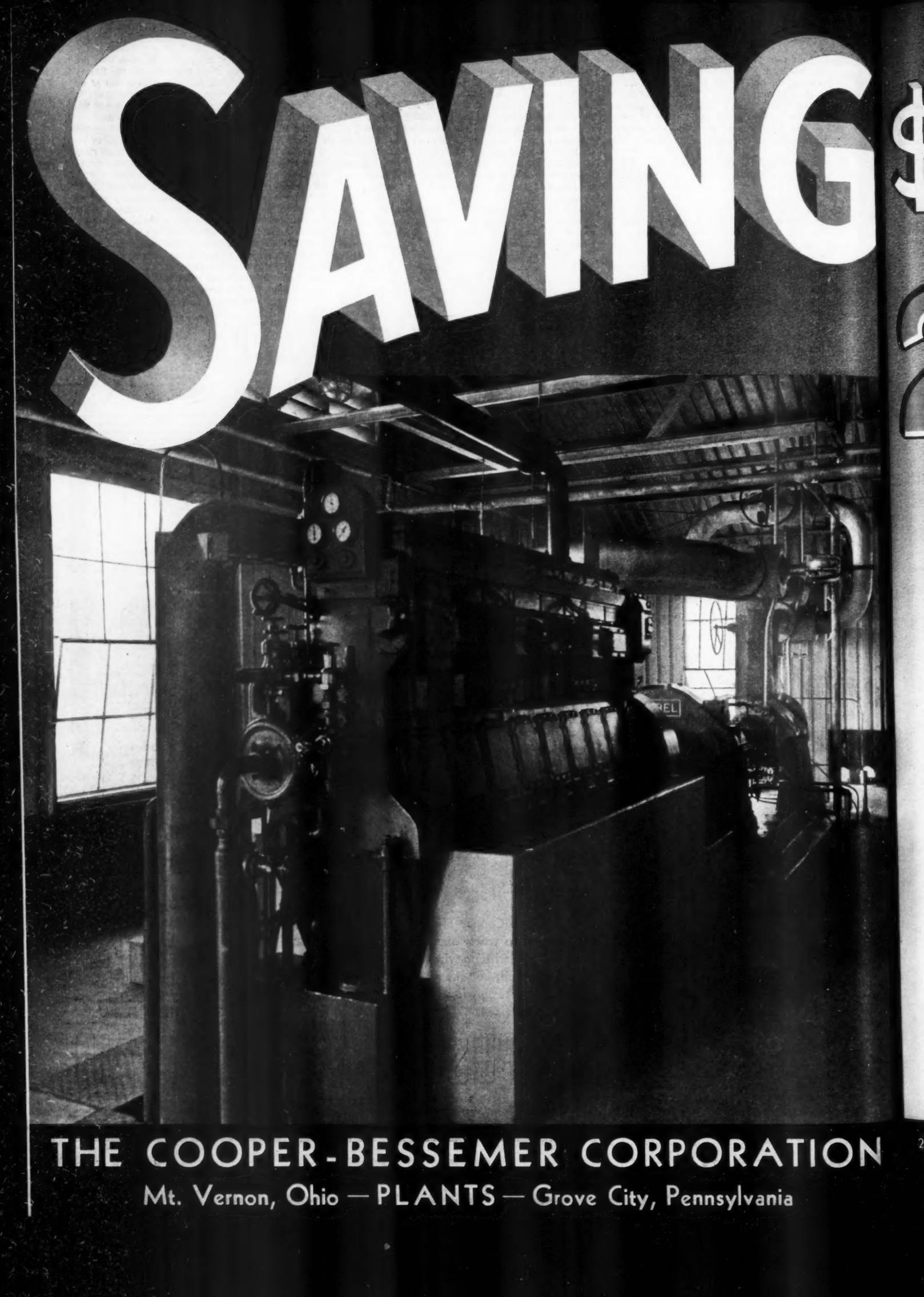

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Here, again, is positive evidence that gas-engine-driven hot-oil pumps are the most economical to operate.

But, *economy* is by no means the only advantage. *Reliability* is also assured, through sturdy Cooper-Bessemer design.

Only an engine that is capable of giving continuous, 24-hour service can "make good" in this refinery.

A recent, non-stop run of 46 days was ended only because it was necessary to make a still-tube replacement.

BIG SPRING, TEXAS—In this plant of Cosden Petroleum Corporation, a Cooper-Bessemer Type EN-8 vertical gas engine, rated 200-250 H. P. at 425-510 r. p. m., drives a centrifugal hot-oil pump through a speed increaser. This installation replaces steam.

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Esperson Building, Houston, Texas

feet in the Madison when the drill pipe became stuck. It was plugged back and completed in November in the Lakota at 5,440-43 feet for 24,000,000 feet per day, open flow.

The Allen Lake gas field in Carbon County was extended one location east in the Ohio Oil Co.-Medicine Bow Oil Co. No. 1 Union Pacific-Wister, C NW SW section 17-22n-78w. It gauged 40,000,000 feet per day in the Sundance at 1,952-2,045 feet, and is the largest gas well in the field. The field was extended four miles to the southeast in 1936 in the Medicine Bow Oil Co. No. 1 Hintze-Government, which the new well offsets on the east.

MONTANA

One new pool was opened on the west side of the Kevin-Sunburst field in Montana, a continuation of drilling in territory formerly considered unproductive, but in which good wells were completed as a result of acidization in that district; an important extension of the Cut Bank field on the west side in the Moulton and Sunburst sands; and the bringing in of a large gas well to the northeast of the Cut Bank area and northwest of Kevin-Sunburst.

MONTANA

Completions by County

County—	Comp.	Prod.	Dry	Gas
Big Horn	7	0	1	6
Carbon	3	0	1	2
Fallon	3	200	2	0
Fergus	6	0	5	1
Glacier	75	7,792	12	11
Hill	3	0	3	0
Musselshell	1	0	1	0
Liberty	1	0	0	1
Petroleum	1	0	1	0
Phillips	2	0	2	0
Pondera	2	0	2	0
Roosevelt	1	0	1	0
Toole	107	4,508	23	5
Yellowstone	5	310	2	0
Total 1937	217	12,810	56	26
Total 1936	247	15,587	47	34
Difference	30	2,777	9	8

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	8	939	1	2
February	4	200	2	0
March	8	400	0	2
April	11	395	2	3
May	28	2,221	6	2
June	27	2,461	7	0
July	29	1,342	8	2
August	26	1,756	8	2
September	24	820	5	4
October	22	1,410	6	4
November	23	632	8	5
December	7	234	3	0
Total	217	12,810	56	26

The discovery was in Pfabe & Engleking No. 1 Innerberg, NW SE SE section 26-35n-4w, about midway between the Kevin-Sunburst field and the gas area of the Cut Bank field. It is about two miles west of the nearest producer. It was completed in October at 2,063 feet in the Ellis-Madison contact topped at 2,060 feet. After acidizing with 500 gallons, it flowed 100 bbls. first 24 hours through the casing. The oil has a parrafin base and tested 38.4 gravity, a better grade than in the field proper and is a "sweet" oil, containing no sulfur. Indications point to it being a small pool, however, as in December the 56 Petroleum Co. No. 1 Davidson, SE SE NW section 26, half a mile to the northwest, had the contact at 2,078-80 feet and showed only a nominal quantity of oil with some water and was abandoned after drilling to 2,113 feet and acidizing without results. Half a mile to the southeast, in the C NW NW section 25-35n-4w, R. C. Tarrant No. 1 Barkulo had sulfur water in the contact and was abandoned at 2,019 feet.

Drilling on the west side of the old field in territory heretofore thought unproductive proved up about 185 acres for Sunburst sand production and 395 acres for Madison production. The more important of these wells were to the west and southwest of the town of Kevin. In October, M. W. Cassidy's No. 1 Mary, CEL NE NW section 5-34n-3w, 2½ miles west of Kevin, pumped 150 bbls. per day from the contact at 1,720 feet. It had only 400 feet of oil in the hole before acidizing with 500 gallons. This is new territory, old wells only having showings before the advent of acidization. In the SW NE of the same section the Eagle Oil Co. had 250,000 feet of gas in the Madison in a well drilled in 1925. To the south and on the east to Kevin there has been practically no drilling. To the northeast in the NW SW NW section 33-35n-3w, Vander Pas & Montgomery No. 1 Thum completed in November, pumped 200 bbls. per day from the contact at 1,695-1,710 feet, the oil being 38.4 gravity with no sulfur. This well extended the Rim Rock pool about a mile to the south. It had only a show before acidization. Three wells making from 25 to 100 bbls. initially were drilled in section 11-34n-2w, in new territory on the south.

Cut Bank Extension

Approximately 170 acres of new territory was proven up on the west side of the Cut Bank field in the Moulton and Sunburst sands, horizons which produce no oil in other parts of the field. In August, the Texas Co. No. 2 Tweedy, C NE NW section 21-35n-6w, flowed 500 bbls. per day for two days through the casing at 2,967 feet, total depth. It had the top of the Sunburst at 2,912 feet and first oil at 2,940 feet, sand continuing to the bottom. Elevation 3,007 feet. Location is half a mile to the southwest of the Santa Rita Oil & Gas Co. No. 1 Lander, the biggest well in the field, completed in 1936, having made as high as 2,000 bbls. a day naturally, and one of the few producers in the Sunburst. Wells to the north, east and south of the big producer were failures in the Sunburst and it was believed No. 1 Lander was a freak. However, developments point to an important discovery. A month later, September, the Santa Rita Co. completed its No. 2 Lander, CWL SW SE section 16-35n-6w, midway between the No. 1 Lander and the No. 2 Tweedy, which flowed 519 bbls. first 24 hours from the Sunburst at 2,900-08, definitely proving that the gusher was not a freak.

In December, a discovery was made to the northeast of the Cut Bank field and northwest of Kevin-Sunburst in what has been designated North Cut Bank, in A. B. Cobb No. 1 State, C NE NE section 30-37n-4e. It topped the Moulton sand at 2,570 feet and gauged 8,300,000 feet at 2,572-85 feet. It was deepened to 2,592 feet without any increase and after running casing, well was shut in until spring when it will either be completed or deepened to the Sunburst. Elevation 3,828 feet.

UTAH

Two wells were drilled in Daggett County, northeastern corner of Utah, which extended the Clay Basin gas field on the south and the west. The Mountain Fuel Supply Co. No. 1 Lauzur, CNL NW NW section 27-3n-24e, was completed early in August at 5,796 feet for 14,571,000 feet of gas per day, open flow, in the Dakota at 5,743-96 feet, after plugging back from the Sundance at 5,955 feet, which horizon contained water. Elevation is 6,389 feet. This well is three-fourths of a mile south of the nearest Dakota sand gasser. The same company's No. 1 Keith Smith, C SW NE section 20-3n-24e, was completed in November at 5,674 feet for 21,000,000 of gas per day through the casing with a rock pressure of 2,190 pounds. The Dakota sand was at 5,608-67 feet. This well is 1¼ miles to the west and a little south of the nearest Dakota sand producer. This gives the company five gas wells on the structure, four in the Dakota and one in the Frontier and better than 1,000 acres have been proved up, the limits not being defined in any direction. The field is connected with the company's trunk gas line into Utah which supplies Salt Lake City, Ogden and other cities and towns in the central part of the state.

UTAH

Completions by County

County—	Comp.	Prod.	Dry	Gas
Carbon	1	0	1	0
Daggett	2	0	0	2
Emery	1	0	1	0
Total 1937	4	0	2	2
Total 1936	8	15	6	1
Difference	4	15	4	1

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
June	1	0	1	0
September	1	0	0	1
October	1	0	1	0
November	1	0	0	1
Total	4	0	2	2

NEBRASKA

County—	Comp.	Prod.	Dry	Gas
Dawes	1	0	1	0
Sioux	2	0	2	0
Total 1937	3	0	3	0

No figures for 1936.

MONTANA FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Little Beaver dome	Fallon	17-4n-62e	Montana-Dakota Utilities Co.	Sept. 26, 1936	2	Madison	8,121	175
Mosser dome	Yellowstone	26-3s-24e	Tarrant Sayre	Dec. 11, 1936	3	Dakota	1,036	300
Kevin-Sunburst—West Extension	Glacier	26-35-4w	Pfabe and Engelking-Enneberg	Sept. 18	...	Kootenai	2,063	350
Kevin-Sunburst—West Extension	Glacier	5-34-3w	Cassidy-Mary	Oct. 2	...	Sunburst	1,720	50
Kevin-Sunburst—East Extension	Glacier	8-35-1w	Rice-Anderson	Aug. 27	...	Sunburst	1,738	40

MONTANA

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
BORDER:													
Daily average	14	194	231	180	162	168	176	153	98	22	159	61	
Month	439	5,419	7,172	5,411	5,026	5,047	5,467	4,734	2,926	676	4,761	1,897	48,975
CAT CREEK:													
Daily average	587	579	641	631	646	649	623	569	582	573	621	578	
Month	18,186	16,203	19,840	18,917	20,038	19,477	19,314	17,645	17,467	17,754	18,622	17,918	221,381
CUT BANK:													
Daily average	8,487	9,010	9,143	10,332	10,447	10,426	10,855	10,332	8,117	7,773	7,109	7,945	
Month	263,112	252,269	283,447	309,949	323,845	312,771	336,506	320,295	243,516	240,947	213,259	246,289	3,346,205
DRY CREEK:													
Daily average	54	13	60	965	520	470	218	87	304	102	295	435	
Month	1,670	355	1,856	28,947	16,115	14,108	6,756	2,722	9,118	3,167	8,849	13,482	107,145
KEVIN-SUNBURST:													
Daily average	3,127	3,739	4,671	4,985	5,109	5,071	5,172	5,157	4,988	3,830	3,929	4,410	
Month	96,947	104,679	144,800	149,535	158,385	152,142	160,317	159,864	149,642	118,743	117,858	136,716	1,649,628
LAKE BASIN:													
Daily average	40	40	40	40	40	40	.....	.....	.....	.....	.....	.....	
Month	1,244	1,120	1,240	1,197	1,249	1,212	.....	.....	.....	.....	.....	.....	7,262
PONDERA:													
Daily average	1,036	1,190	845	1,142	1,167	1,193	1,571	1,229	1,232	1,073	974	1,118	
Month	32,130	33,311	26,197	34,253	36,166	35,802	48,706	38,112	36,954	33,254	29,223	34,660	418,768
Daily average	13,346	14,763	15,631	18,274	18,091	18,019	18,615	17,528	15,321	13,372	13,086	14,547	15,889
Total 1937	413,728	413,356	484,552	548,209	560,824	540,559	577,066	543,372	459,623	414,541	392,572	450,962	5,799,364
Total 1936	369,148	295,191	482,391	488,100	532,053	516,660	495,132	461,094	566,610	516,491	502,260	573,531	5,798,661
Total 1935	348,101	302,697	321,665	323,965	325,205	312,071	403,140	415,226	398,069	410,648	409,182	397,259	4,367,228
Total 1934	223,641	196,789	220,434	235,504	275,544	247,687	329,577	353,263	321,510	367,863	367,837	369,366	3,509,015
Total 1933	183,086	150,864	172,608	179,310	186,031	203,340	220,052	219,518	206,760	213,931	216,840	205,716	2,358,056

Annual Review

MAJOR RESULTS IN WEST TEXAS BIG YEAR IN FIELD OPERATIONS

By MITCHELL TUCKER

The year 1937 was the most active and successful ever experienced in the West Texas district. Almost twice as many wells were drilled and completed in 1937 as in 1936, and more than twice the new production was added.

Nine major fields were either discovered or substantially increased in productive area during the year, and it is estimated that a total of about 500,000,000 bbls. was added to the recoverable reserves in this vast territory.

Ordovician Production

The opening of the second Ordovician field to production in the basin area during 1937 was probably its most important development. Although the reserves added from this discovery fall far short of several of the other Permian lime discoveries of past years, its significance lies in the stimulation given the search for deeper production on all other known structures in the basin. The Big Lake field of Regan County, about 60 miles to the southwest, is the only field in Western Texas that formerly produced from the Ordovician beds.

The Ellenburger lime discovery (Lower Ordovician) was made in the deep exploration of the old shallow Tubbs or Sand Hills area of western Crane County by Gulf Oil Corp. in its No. 4 Waddell and others, P.S.L. Survey. In the latter part of April this well topped the best saturation in the Ellenburger at 6,004 feet, and at a total depth of 6,014 feet it flowed 513 bbls. through 2½-inch tubing choke in 24 hours. Another test of this level was immediately begun in No. 5 Waddell, and in August it was completed at a total depth of 5,971 feet, flowing at the rate of 8,108 bbls. per day on potential test, showing for a much better well than its predecessor. The oil tests 44.6 degrees gravity. Gulf's No. 6 Waddell was later drilled to the west of No. 5 and proved a dry hole, indicating the plunging or faulted position of the older beds.

About 10 Ordovician wildcats were subsequently drilled through the basin without success. As the year closed, principal interest in the district was centered around Magnolia Petroleum Co.'s deep test to this level in northern Pecos County, No. 1-A McKee. After topping the Ordovician abnormally high, soft lime was cored and drilled from 5,273-75 and 5,275-95 feet, carrying some odor of oil. Operators at the close of the year were preparing to set 9⅝-inch casing and test.

In the northwestern part of Crane County an important extension of the Waddell pool was made by Sinclair Prairie Oil Co., connecting the Waddell and the Jordan areas into one producing structure. As a result, approximately 5,000 acres were added to the proven territory. Sinclair's No. 1-24 University was completed in May for a 342-bbl. producer in the Permian lime, total depth 3,591 feet. Since that time, a good many producers have been added in this intervening area between the Waddell and Jordan fields.

Loving County

On January 15, 1937, the second Delaware sand field of West Texas was opened by Mason Oil Co. (Michigan Oil & Gas Co.) in its No. 2 Kyle, T.&P. Survey, northwestern Loving County, about 15 miles north of the Wheat field, the original Delaware sand field of the district, also in Loving County. This new discovery topped the Delaware lime at 3,860 feet, the saturated sand at 3,895 feet, and at a total depth of 3,903 feet completed the well as a 400-bbl. per day producer, after shooting with 120 quarts of nitroglycerine. Nine wells have subsequently been drilled in the area, proving up 500 acres to production. Limits of production had not been established on all sides when the year ended.

Hockley County

The Texas Co. opened the Slaughter field of south-

(Continued on Page 88)

WEST TEXAS FIELDS DISCOVERED DURING 1937

Field—	County	Discovery well	Date of completion	No. wells comp. to date	Well spacing	Initial producing capacity— Bbls.	Test	Size choke
Jordan	Crane	H. M. Clark, Atty., No. 1 Jordan	2-21-37	11	150-300	94	24 hrs.	pumping
Mason	Loving	Mason Oil Co. (now Michigan Gas & Oil Corp.) No. 2 Kyle	1-15-37	4	150-300	300	24 hrs.	No tbg. 2" flow line
Seminole	Gaines	Harry Adams Corp. (now Adams & Bradley) No. 1-A Averitt. Well was drilled by Amerada Pet. Corp. (first oil well).	1- 8-37	3	150-300	234	24 hrs.	1" choke
Slaughter	Hockley	Texas Co. No. 1 Guerry	4- 6-37	2	150-300	333	24 hrs.	1" choke
Scanlon	Dawson	E. L. Wilson Scanlon	7-28-37	1	150-300	97	24 hrs.	Pumping
Wasson	Gaines	Continental Oil Co. et al No. 1 Wasson	6-19-37	16	150-300	333	24 hrs.	2" tubing
Wilson	Ward	C. H. Mahres No. 1 Wilson	8-19-37	1	150-300	133	24 hrs.	2" tubing

WEST TEXAS

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
WINKLER COUNTY:													
Emperor—													
Daily average	1,149	1,110	1,492	1,396	1,488	1,472	1,290	1,590	1,488	1,484	1,386	1,379	
Month	35,603	31,075	46,259	41,876	46,143	44,149	39,983	49,289	44,648	46,011	41,579	42,738	509,353
Halley—													
Daily average	347	431	459	551	621	633	611	688	670	647	605	609	
Month	10,765	12,080	14,225	16,524	19,265	18,992	18,932	21,339	20,112	20,048	18,160	18,874	209,316
Henderson—													
Daily average	1,985	2,603	4,292	4,380	4,519	4,560	4,064	4,546	4,110	3,823	3,440	3,447	
Month	61,548	72,876	133,056	131,391	140,100	136,794	125,972	140,920	123,296	118,517	103,209	106,861	1,394,540
Hendrick—													
Daily average	12,077	12,029	12,205	12,117	11,979	12,015	12,162	11,877	11,602	12,051	11,602	11,610	
Month	374,392	336,807	378,352	363,517	371,340	360,458	377,024	368,179	348,073	373,585	348,057	359,904	4,359,688
Keystone—													
Daily average	1,570	3,115	3,058	2,794	2,942	2,971	2,999	3,608	3,327	3,165	2,748	2,810	
Month	48,688	87,215	94,800	83,824	91,215	89,122	92,965	111,859	99,823	98,117	82,452	87,098	1,067,178
Leck—													
Daily average	531	604	421	405	402	399	419	455	594	571	481	477	
Month	16,467	16,915	13,065	12,153	12,462	11,977	12,993	14,091	17,819	17,714	14,431	14,787	174,874
Scarborough—													
Daily average	1,848	1,864	1,916	1,836	1,896	1,888	1,908	1,904	1,808	1,842	1,663	1,682	
Month	57,277	52,180	59,402	55,076	58,777	56,646	59,162	59,027	54,226	57,109	49,885	52,149	670,916
Sealey—													
Daily average	442	390	464	411	468	462	552	556	569	488	455	449	
Month	13,704	10,932	14,373	12,344	14,510	13,870	17,120	17,248	17,065	15,137	13,643	13,921	173,867
Kermet—													
Daily average	12,979	18,368	19,185	19,515	21,118	21,114	20,815	21,617	20,305	19,323	17,591	17,603	
Month	402,351	514,311	594,743	585,445	654,653	633,427	645,278	670,123	609,140	599,005	527,744	545,700	6,981,920
Eaves—													
Daily average							197	186	235	251	290	246	
Month							6,119	5,763	7,052	7,786	8,714	7,616	43,050
CRANE COUNTY:													
Church-Fields—													
Daily average	7,052	6,985	7,023	7,052	6,995	7,007	6,919	6,852	6,750	6,834	6,571	6,546	
Month	218,626	195,594	217,728	211,546	216,860	210,197	214,495	212,403	202,512	211,841	197,125	202,926	2,511,853
Cowden—													
Daily average	828	1,518	1,733	1,815	1,935	1,940	2,036	2,288	2,248	2,128	1,933	1,940	
Month	25,667	42,507	53,732	54,461	59,994	58,206	63,131	70,913	67,446	65,976	57,994	60,146	680,173
Gulf-McElroy—													
Daily average	4,829	4,912	4,532	4,231	4,351	4,317	3,784	4,743	4,592	4,660	4,409	4,410	
Month	149,685	137,530	140,480	126,920	134,882	129,328	117,303	147,025	137,773	144,469	132,277	136,696	1,634,368
McClintic—													
Daily average	1,045	1,016	1,248	1,197	1,240	1,242	1,116	1,152	1,122	1,022	955	949	
Month	32,408	28,460	38,697	35,909	38,439	37,259	34,605	35,722	33,650	31,692	28,635	29,411	404,887
Sand Hills—													
Daily average	850	933	1,023	1,231	1,270	1,301	1,593	1,971	1,812	1,674	1,505	1,516	
Month	26,344	26,116	31,713	36,941	39,369	39,033	49,377	61,104	54,374	51,892	45,154	46,992	508,409

(Continued on Next Page)

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WEST TEXAS (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
Waddell—													
Daily average	1,123	2,283	2,327	2,153	2,368	2,349	2,110	2,177	2,302	1,918	1,481	1,427	
Month	34,800	63,935	72,134	64,601	73,400	69,576	65,408	67,487	69,051	59,447	44,446	44,241	728,526
ECTOR COUNTY:													
Cowden, North—													
Daily average	7,300	7,542	8,129	7,938	8,400	8,366	8,667	9,134	8,309	7,954	7,037	6,988	
Month	226,313	211,188	251,997	238,130	260,385	250,980	268,690	283,159	249,259	246,585	211,116	216,628	2,914,430
Cowden, South—													
Daily average	325	388	368	343	324	320	284	275	303	304	272	274	
Month	10,090	10,852	11,399	10,286	10,054	9,595	8,791	8,527	9,078	9,414	8,149	8,502	114,737
Foster—													
Daily average	787	1,063	1,203	1,446	1,932	1,976	2,465	3,070	3,124	3,109	3,500	3,481	
Month	24,409	29,751	37,284	43,383	59,888	59,280	76,403	95,185	93,716	96,366	105,000	107,897	828,562
Goldsmith—													
Daily average	2,114	4,463	5,670	6,179	7,502	7,562	9,703	15,081	15,151	11,638	11,115	11,098	
Month	65,533	124,971	175,761	185,374	232,555	226,860	300,794	467,453	454,521	360,766	333,456	344,040	3,272,084
Harper—													
Daily average	147	153	235	312	338	329	416	654	1,067	1,107	605	614	
Month	4,569	4,270	7,282	9,365	10,489	9,877	12,899	20,261	32,016	34,331	18,160	19,039	182,558
Penwell—													
Daily average	5,390	6,359	6,410	5,955	6,076	6,067	5,556	5,585	5,248	5,174	4,637	4,629	
Month	167,080	178,048	198,719	178,640	188,362	182,012	172,242	173,150	157,427	160,388	139,103	143,502	2,038,673
Wasson—													
Daily average	.....	.....	.....	.....	.....	.....	117	388	582	1,375	1,852	1,860	
Month	.....	.....	.....	.....	.....	.....	3,612	12,035	17,452	42,640	55,574	57,660	188,973
RUNNELS COUNTY:													
McMillan—													
Daily average	159	146	145	129	124	127	114	120	118	119	111	107	
Month	4,926	4,082	4,482	3,858	3,835	3,817	3,546	3,731	3,546	3,694	3,323	3,330	46,170
YOAKUM COUNTY:													
Bennett—													
Daily average	64	70	217	330	262	276	272	480	525	390	556	549	
Month	1,996	1,964	6,728	9,912	8,108	8,283	8,432	14,891	15,735	12,100	16,681	17,011	121,841
CROCKETT COUNTY:													
World—													
Daily average	1,337	1,322	1,341	1,298	1,250	1,271	1,155	1,127	1,080	1,017	966	971	
Month	41,457	37,029	41,566	38,941	38,749	38,126	35,799	34,927	32,394	31,550	28,974	30,110	429,622
HOWARD AND GLASSCOCK COUNTIES:													
Howard-Glasscock—													
Daily average	16,666	17,089	17,301	16,541	16,892	16,902	15,860	16,220	15,006	14,171	14,252	14,156	
Month	516,634	478,485	536,330	496,230	523,666	507,060	491,650	502,815	450,166	439,314	427,556	438,842	5,808,748
Iatan-East Howard—													
Daily average	6,961	6,896	7,087	7,104	7,122	7,109	6,505	7,004	6,767	7,210	6,879	6,892	
Month	215,794	193,090	219,701	213,128	220,770	213,262	201,645	217,131	203,014	223,506	206,379	213,660	2,541,080
Snyder—													
Daily average	.....	.....	.....	.....	.....	.....	104	257	224	335	359	353	
Month	.....	.....	.....	.....	.....	.....	3,219	7,986	6,726	10,383	10,759	10,944	50,017
ANDREWS COUNTY:													
Deep Rock—													
Daily average	314	315	329	330	359	360	331	332	333	355	314	322	
Month	9,736	8,825	10,213	9,894	11,144	10,812	10,252	10,277	9,981	10,991	9,417	9,987	121,529
Fuhrman—													
Daily average	747	874	962	961	1,149	1,142	1,075	1,311	1,164	1,081	1,154	1,144	
Month	23,165	24,475	29,815	28,818	35,613	34,269	33,337	40,648	34,907	33,522	34,609	35,466	388,644
Mason—													
Daily average	.....	178	62	147	257	252	298	360	378	355	302	318	
Month	.....	4,990	1,920	4,417	7,980	7,567	9,234	11,167	11,354	11,018	9,064	9,849	88,560
Means—													
Daily average	1,561	1,629	2,554	2,502	2,764	2,708	2,119	2,593	2,425	2,209	1,881	1,901	
Month	48,404	45,608	79,179	75,046	85,670	81,236	65,680	80,390	72,751	68,484	56,420	58,920	817,788
Jordon—													
Daily average	.....	.....	.....	36	96	96	143	304	423	344	443	417	
Month	.....	.....	.....	1,089	2,968	2,880	4,447	9,414	12,704	10,655	13,300	12,932	70,389
PECOS COUNTY:													
Yates—													
Daily average	28,223	28,450	35,365	30,419	30,928	30,763	25,512	35,724	32,275	30,580	24,784	24,810	
Month	874,907	796,597	1,096,322	912,565	958,765	922,890	790,866	1,107,451	968,246	947,979	743,517	769,116	10,889,221
Masterson—													
Daily average	1,036	916	846	700	733	728	899	740	749	681	650	653	
Month	32,115	25,647	26,238	20,985	22,728	21,840	27,861	22,949	22,459	21,110	19,492	20,240	283,664
Nettervillle—													
Daily average	335	312	337	192	177	182	239	225	314	277	259	266	
Month	10,392	8,745	10,453	5,760	5,502	5,460	7,403	6,977	9,411	8,579	7,776	8,253	94,711
Pecos Valley—													
Daily average	425	411	422	463	451	451	457	434	423	492	501	489	
Month	13,176	11,499	13,075	13,888	13,973	13,530	14,171	13,445	12,679	15,259	15,038	15,147	164,880
Taylor-Link—													
Daily average	1,042	1,056	1,051	1,045	1,064	1,069	1,172	1,249	1,247	1,179	1,173	1,160	
Month	32,316	29,568	32,586	31,340	32,999	32,070	36,345	38,714	37,413	36,550	35,201	35,948	411,050
Toborg—													
Daily average	2,075	2,072	2,225	2,216	2,159	2,207	2,082	2,179	2,156	2,178	1,970	2,004	
Month	64,327	58,014	68,984	66,466	66,922	66,210	64,550	67,541	64,673	67,528	59,086	62,116	776,417
LOVING COUNTY:													
Wheat—													
Daily average	1,526	1,505	1,516	1,504	1,542	1,528	1,392	1,393	1,397	1,355	1,375	1,388	
Month	47,314	42,150	47,002	45,135	47,791	45,840	43,147	43,176	41,905	42,000	41,242	43,032	529,734
WARD COUNTY:													
Shipley—													
Daily average	1,760	1,767	1,796	1,678	1,714	1,711	1,732	1,753	1,709	1,364	1,542	1,511	
Month	54,560	49,471	55,661	50,364	53,135	51,325	53,682	54,344	51,269	42,281	46,245	46,833	609,170
Ward, North—													
Daily average	9,238	10,190	10,057	9,367	9,672	9,663	7,144	8,402	7,625	6,910	6,189	6,236	
Month	286,387	285,332	311,767	281,017	299,841	289,900	221,479	260,456	228,761	214,207	185,679	193,320	3,058,146
Ward, South—													
Daily average	13,902	14,110	16,232	15,603	15,978	15,810	15,645	22,075	17,671	13,596	11,999	12,012	
Month	430,958	395,086	503,195	468,090	495,322	474,300	485,004	684,331	530,115	421,490	359,957	372,366	5,620,214
Estes—													
Daily average	2,939	5,458	9,424	9,178	9,759	9,804	8,291	12,122	10,365	8,763	7,629	7,634	
Month	91,112	152,811	292,131	275,333	302,524	294,128	257,022	375,784	310,946	271,660	228,860	236,649	3,088,960
UPTON COUNTY:													
Hurdle—													
Daily average	184	156	101	123	234	199	257	204	197	175	158	161	
Month	5,694	4,361	3,128	3,690	7,261	5,960	7,957	6,332	5,910	5,440	4,748	5,002	65,483
McCamey—													
Daily average	10,074	10,412	10,618	10,875	11,603	11,472	12,278	12,647	13,021	13,054	12,782	12,773	
Month	312,302	291,547	329,156	326,241	359,695	344,166	380,625	392,051	390,630	404,688	383,450	395,959	4,310,510
REAGAN COUNTY:													
Big Lake—													
Daily average	7,668	7,708	7,536	7,460	7,401	7,417	7,371	7,479	7,413	7,432	7,611	7,640	
Month	237,723	215,824	233,609	223,813	229,441	222,519	228,516	231,863	222,396	230,382	228,323	236,836	2,741,245
Grayson—													
Daily average	162	164	164	154	159	156	175	171	148	160	156	157	
Month	5,030	4,585	5,076	4,633	4,914	4,680	5,437	5,314	4,437	4,975	4,680	4,867	58,628
MITCHELL COUNTY:													
Westbrook—													
Daily average	902	873	851	854	847	852	838	822	914	864	816	818	
Month	27,954	24,440	26,386	25,630	26,250	25,549	25,972	25,470	27,412	26,769	24,488	25,349	311,669
MISCELLANEOUS POOLS:*													
Daily average	352	339	315	427	438	438	660	648	700	567	726	1,091	
Month	11,270	9,488	9,758	12,824	13,578	13,125	20,474	20,086	21,000	17,658	21,779	33,833	197,936
Daily average	174,386	192,547	212,247	204,857	213,204	212,852	203,905	238,772	224,082	209,762	193,670	193,976	206,271
Total 1937	5,405,968	5,391,326	6,579,662	6,145,724	6,609,318	6,385,562	6,321,050	7,401,923	6,722,469	6,502,608	5,810,106	6,013,245	75,288,961
Total 1936	4,553,683	4,423,051	5,162,895	5,187,630	5,444,065	5,060,640	5,214,076	5,340,215	4,850,340	5,291,607	4,613,850	5,187,013	60,329,065
Total 1935	4,552,381	4,149,964	4,600,741	4,392,450	4,469,983	4,305,750	4,596,711	4,497,139	4,406,970	4,601,268	4,669,260	4,745,759	53,988,376
Total 1934	3,824,284	3,618,748	4,081,832	4,051,380	4,346,572	4,172,130	4,315,820	4,551,513	4,440,960	4,095,472	3,932,190	4,273,164	49,704,065
Total 1933	4,921,994	4,455,612	5,079,691	4,875,600	4,981,948	4,913,940	5,041,282	5,170,893	4,215,180	4,011,369	3,668,760	3,936,442	55,272,711

*Miscellaneous pools and their total production in barrels in 1937 are: Bashara, 16,437; Edwards, 3,155; Todd, 62; Duggan, 30,268; Walker, 545; Garza, 16,579; Northwest, 11,976; Seminole, 25,994; Irion, 22,224; Monroe, 7,357; Webb-Ray, 8,063; Carter, 2,274; Slaughter, 10,275; Wilson, 2,039; Moore, 7,524; Scanlon, 1,561; Dobbs, 4,113; Johnson, 15,012; Parker, 12,478; total, 197,936.

ern Hockley County in April. Later a 1-mile, and then a 3-mile, extension was given the productive area, indicating a proven territory of over 1,000 acres from early and meager control. The company's No. 1 Slaughter Ranch, about 12 miles southeast of the Duggan field of Cochran County, made 333 bbls. before acidizing with 5,000 gallons, and 502 bbls. through 2½-inch tubing after acidizing. It logged the first oil in the Permian lime at 4,968-73 feet, and an increase from 4,980-5,025 feet. This was the first production in Hockley County. Near the end of the year, Texas Co. completed the third producer in the field, giving it a 3-mile length at least, in its No. 2 Bob Slaughter, flowing 531 bbls. through seven-eighths inch choke, total depth 4,985 feet.

North Permian Basin Fields

The new trend of producing fields from the Permian lime in the northern part of the basin was further established during the year. Late in 1936 the Seminole field of central Gaines County was opened to gas production, and later was proved an oil producing structure by Amerada Petroleum Corp. Five wells have been completed as oil producers in the Seminole field, and they afford no adequate control for estimating the productive acreage. However, it lies about midway between the Means and the Wasson-Denver field, the latter having about 18,000 proven acres, and with comparable thicknesses of saturation in the Permian, its future looks promising.

To the north of Seminole, semiwildcats drilled in the intervening area between the Wasson and Denver fields (Wasson field in Gaines County and Denver field in Yoakum County) proved them to be one common structure. The last of these extension wells, which definitely proved the connection of the two fields, was American Liberty Oil Co. No. 1 Willard, in the P.S.L. Survey only 400 feet north of the Gaines County line into Yoakum County. This well topped the Permian at 4,770 feet, good oil and gas saturation at 4,910 feet, and at a total depth of 5,000 feet tested 15 bbls. hourly on initial gauges.

In September two discoveries were made in Yoakum County, north and in the same trend as the Seminole-Wasson-Denver fields. The Texas Co. No. 1 Walker, John H. Gibson Survey, had saturation in the Permian from 5,200 to 5,329 feet, and was made a 60-bbl. well on the pump. At the same time, Bohago Oil Corp. and Bond Oil Corp. No. 1 J. L. West, 5 miles due north, section 606, Block D of the same survey, flowed 102 bbls. daily on completion test from the Permian drilled from 5,085 to 5,255 feet.

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GRIZZLY ROTARY HOSE

WEST TEXAS DISTRICT

Completions by Counties

County—	Comp	Prod.	Dry	Gas
Andrews	50	21,295	8	0
Bailey	2	0	2	0
Cochran	3	0	3	0
Coke	1	0	1	0
Crane	152	128,531	19	0
Crockett	7	287	6	0
Dawson	4	100	2	0
Ector	507	468,153	11	0
Edwards	2	0	2	0
Fisher	35	18,083	8	0
Gaines	32	15,837	15	0
Garza	3	50	2	0
Glassock	34	12,660	7	0
Hockley	2	0	2	0
Howard	109	66,643	5	0
Jones	241	77,867	78	0
Kent	1	0	1	0
Loving	11	1,669	6	0
Lynn	7	0	1	0
McCulloch	1	0	1	0
Martin	1	0	1	0
Menard	1	0	1	0
Mitchell	2	0	2	0
Nolan	2	0	2	0
Pecos	157	80,096	52	0
Presidio	2	0	2	0
Reagan	2	0	2	0
Reeves	1	0	1	0
Runnels	2	0	2	0
Schleicher	1	0	1	0
Scurry	2	14	1	0
Sterling	2	0	2	0
Stonewall	2	0	2	0
Taylor	9	34	7	0
Terrell	1	0	1	0
Terry	3	0	3	0
Tom Green	1	0	1	0
Upton	309	152,589	23	0
Ward	476	450,609	29	3
Winkler	614	519,284	8	8
Yoakum	18	4,433	8	0
Totals	2,806	2,018,229	331	11

Completions by Months for 1937

Month—	Comp.	Prod.	Dry	Gas
January	186	128,043	19	1
February	180	133,823	19	2
March	266	235,334	30	2
April	215	169,635	22	0
May	247	190,627	18	0
June	247	186,425	19	0
July	321	213,045	41	1
August	244	150,395	37	2
September	238	148,713	29	0
October	220	157,467	31	0
November	194	154,327	22	2
December	248	150,395	44	1
Total, 1937	2,806	2,018,229	331	11
Total, 1936	1,586	915,473	193	24
Difference	1,220	1,102,756	138	13

In northwestern Dawson County, which also came in for active lease and exploration play due to the North Permian Basin discoveries, a new producing field of yet undetermined proportions was opened. Ray Albaugh and others No. 1 J. Robinson in the E.L.R.R. Survey, pumped 37 bbls. in four hours after acidizing from a total depth of 5,035 feet, in the Permian. A second well drilled in the area, by E. L. Wilson and others, in August was a failure, having found heavy flows of sulfur water around 5,000 feet. No other tests of the area have been made as there is no pipe line outlet in the field, and production from the two tests thus far drilled have been rather disappointing.

Moore Brothers of Midland completed a small producer in eastern Howard County in May in No. 1 T. P. Land Trust, T.&P. Survey. From saturated pay at 2,700-25 and 2,781-2,813 feet, the well pumped 190 bbls. on initial gauge. Location is about midway between the old Chalk field on the west, and the Dodge-Denman field on the east.

The Harper field of Ector County was discovered late in 1936, but early in 1937 it proved to be a major discovery. At the close of the year a total of about 7,000 acres had been proven in the productive area, without having defined the limits on either side. It is now one of the most active areas in Ector County.

The Goldsmith field in Ector County was opened late in 1935. During the year 1936 it developed into one of the largest producing areas in the basin, and added extension areas on three sides, known as the Cummins, Scharbauer and Davidson fields. Development of the field continued in a methodical manner through 1937, during which time all four producing areas were established as one common reservoir, although partially separated in some spots by saddles or barren spots. At the present time the Goldsmith field comprises about 20,000 productive acres, and remains yet to be defined on three sides.

Annual Review

IMPORTANT POOLS OPEN IN ARKANSAS AND NORTH LOUISIANA AREA

By GEORGE WEBER

A number of important developments in North Louisiana, Arkansas and the eastern border of Texas in 1937 combined to give that tri-state area one of its most active years in oil history. The increase in deeper drilling, brought about by discoveries of the previous year, opened new production in the Glen Rose and Permian horizons, in new fields, and in existing ones in which production had been mainly from shallow sands.

Arkansas was most prominent in the revival of drilling and finding of new reserves. With the extension of the prolific Rodessa field across the state boundary into Miller County, and the discovery and deep development of the Shuler field of Union County, that state gained a total of 182 new producers as against 89 for the previous year, and new production of 68,500 bbls. per day was opened; nine times the total production brought in in Arkansas during 1936.

With development in the Rodessa field of Caddo Parish settled mainly to routine drilling, the principal North Louisiana gains in 1937 were made in the rapidly expanded Lisbon field of Claiborne and Lincoln parishes, and in the new deep Bodcaw horizon of the Cotton Valley field, in Webster Parish. Three new gas and distillate discoveries added to the large reserves of that type in North Louisiana, and proven field extensions, together with important wildcat tests under way at the close of the year, presaged continued activity for the next several months.

Of prime importance, the new Marion County extension to the Rodessa field, in the East Texas border section, claimed considerable attention, and although the two new areas opened to production at Jefferson and Lodi, are not yet joined to the Rodessa field in Cass County by production, the last week of the year saw the completion of a well which virtually joined the two individual pools.

Rodessa—Texas

The most important extension to the tri-state Rodessa field during the year was the completion of the Holcomb & Thomason and Flesh & Hootkins No. 1 Lizzie Henderson, 12 miles southwest of the previous Rodessa production limit in Cass County. The wildcat, in the Bennington Survey, three miles north of the town of Jefferson, cored porous lime at 5,935-6,032 feet, the base of the Gloyd, in February, and was carried to a total depth of 6,405 feet, before plugging back and

LOUISIANA FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Producing formation	Total depth (feet)	Initial potential capacity	Date of completion 1937	No. of wells Dec. 31, 1937
Lisbon	Claiborne-Lincoln	1-20-5w	E. T. Oakes et al	Lower Glen Rose	5,379	90	Dec. 25, 1936	156
Cotton Valley	Webster	28-21-10	Ohio Oil Co.	Lower Travis Pk.	8,188	235	Jan. 13,	26
Jefferson*	Marion	.....	Holcomb & Thompson, Flash & Hootkins		6,405	87	Apr. 20	35
Lodi*	Marion	.....	Arkansas Natural Gas Co.	Gloyd	6,181	50	Apr. 22	

*Two areas joined during year by well located between two fields.

NORTH LOUISIANA

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
BELLEVUE:													
Daily average	741	766	803	775	786	781	753	747	734	765	796	772	
Month	22,971	21,448	24,893	23,250	24,366	23,430	23,343	23,157	22,020	23,715	23,880	23,932	280,405
CADDO, Light:													
Daily average	3,960	3,833	4,047	4,008	3,986	3,995	3,939	3,874	3,852	3,849	3,897	3,845	
Month	122,760	107,324	125,457	120,240	123,566	119,850	122,109	120,094	115,560	119,319	116,910	119,195	1,432,384
CADDO, Heavy:													
Daily average	2,565	2,463	2,398	2,337	2,395	2,538	2,562	2,677	2,682	2,632	2,699	2,667	
Month	79,515	68,964	74,338	70,110	74,245	76,140	79,422	82,987	80,460	81,592	80,970	82,677	931,420
CONVERSE:													
Daily average	846	855	810	906	782	807	805	728	795	662	638	633	
Month	26,226	23,940	25,110	27,180	24,242	24,210	24,955	22,568	23,850	20,522	19,140	19,623	281,566
COTTON VALLEY, Heavy:													
Daily average	267	270	316	256	275	251	192	131	303	435	383	329	
Month	8,277	7,560	9,796	7,680	8,525	7,530	5,952	4,061	9,090	13,485	11,490	10,199	103,645
COTTON VALLEY, Light:													
Daily average	540	537	526	1,924	1,755	2,620	4,780	3,629	3,473	3,688	3,634	3,827	
Month	16,740	15,036	16,306	57,720	54,405	78,600	148,180	112,499	104,190	114,328	109,020	118,637	945,661
DE SOTO AND RED RIVER:													
Daily average	1,366	1,384	1,382	1,423	1,497	1,583	1,654	1,521	1,496	1,482	1,453	1,434	
Month	42,346	38,752	42,842	42,690	46,407	47,490	51,274	47,151	44,880	45,942	43,590	44,454	537,818
ELM GROVE:													
Daily average	335	342	358	376	385	335	364	396	394	396	394	389	
Month	10,385	9,576	11,098	11,280	11,935	10,050	11,284	12,276	11,820	12,276	11,820	12,059	135,859
HAYNESVILLE:													
Daily average	3,349	3,335	3,317	3,460	3,383	3,114	3,088	3,017	3,012	3,106	3,030	3,055	
Month	103,819	93,380	102,827	103,800	104,873	93,420	95,728	93,527	90,360	96,286	90,900	94,705	1,163,625
HOLLY:													
Daily average	130	141	141	136	125	131	135	120	115	91	99	111	
Month	4,030	3,948	4,371	4,080	3,875	3,930	4,185	3,720	3,450	2,821	2,970	3,441	44,821
HOMER:													
Daily average	2,546	2,578	2,582	2,667	2,544	2,522	2,528	2,485	2,481	2,460	2,442	2,456	
Month	78,926	77,184	80,042	80,010	78,864	75,660	78,368	77,035	74,430	76,260	73,260	76,136	921,175
LISBON:													
Daily average	.....	.....	303	1,407	5,035	10,765	13,510	13,307	13,931	6,045	5,462	7,954	
Month	.....	.....	9,393	42,210	156,085	322,950	418,810	412,517	417,930	187,395	163,860	246,574	2,377,724
PLEASANT HILL:													
Daily average	139	132	135	130	130	136	122	121	121	129	121	120	
Month	4,309	3,696	4,185	3,900	4,030	4,080	3,782	3,751	3,630	3,999	3,630	3,720	46,712
RODESSA:													
Daily average	57,885	49,307	48,181	48,220	49,898	48,719	49,311	50,379	50,193	44,920	43,305	43,228	
Month	1,794,435	1,380,596	1,493,611	1,446,600	1,546,838	1,461,570	1,528,641	1,561,749	1,505,790	1,392,520	1,299,150	1,340,068	17,751,568
SAREPTA-CARTERVILLE:													
Daily average	405	352	388	398	397	365	341	310	311	321	312	303	
Month	12,555	9,856	12,028	11,940	12,307	10,950	10,571	9,610	9,330	9,951	9,360	9,393	127,851
SLIGO:													
Daily average	415	286	366	365	365	331	360	417	353	252	247	384	
Month	12,865	8,008	11,346	10,950	11,315	9,930	11,160	12,927	10,590	7,812	7,410	11,904	126,217
SUGAR CREEK:													
Daily average	.....	.....	.....	.....	.....	360	546	444	456	396	354	321	
Month	.....	.....	.....	.....	.....	10,800	16,926	13,764	13,680	12,276	10,620	9,951	88,017
URANIA:													
Daily average	2,757	2,753	2,831	2,799	2,821	2,862	2,858	2,813	2,772	2,740	2,727	2,874	
Month	85,467	77,084	87,761	83,970	87,451	85,860	88,598	87,203	83,160	84,940	81,810	89,094	1,022,398
ZWOLLE:													
Daily average	814	781	705	716	785	762	787	762	771	688	636	828	
Month	25,234	21,868	21,855	21,480	24,335	22,860	24,397	23,622	23,130	21,328	19,080	25,668	274,857
Daily average	79,060	70,115	69,589	72,303	77,344	82,977	88,635	87,878	88,245	75,057	72,629	75,530	78,339
Total 1937	2,450,860	1,963,220	2,157,259	2,169,090	2,397,664	2,489,310	2,747,685	2,724,218	2,647,350	2,326,767	2,178,870	2,341,430	28,593,723
Total 1936	1,566,554	1,757,603	1,961,959	1,902,420	2,565,219	2,316,510	2,530,406	2,539,675	2,411,370	2,374,383	2,344,920	2,478,202	26,749,221
Total 1935	721,897	644,224	711,791	691,590	716,167	693,420	716,844	764,367	801,540	971,168	985,260	1,211,232	9,629,495
Total 1934	854,577	786,128	842,549	783,240	770,060	769,890	768,459	758,632	720,510	741,055	719,280	736,281	9,251,061
Total 1933	918,933	843,500	981,212	903,660	829,374	759,270	784,083	817,191	773,940	796,018	776,010	796,576	9,979,767

setting casing at 6,088 feet. After several weeks of testing and reworking, the discovery well of the Jefferson area was completed late in April.

Concurrent with development in the Jefferson area, a second test, the Arkansas-Louisiana Gas Co. No. 1 Ford, in the Lodi area, between Jefferson and Rodessa proper, cored saturation in the Gloyd sand at 6,100 feet and was completed late in April. The discovery of what appeared to be an extension of the Rodessa field brought a very active play to the Jefferson-Lodi district, and during the second half of 1937 the Marion County section of the field vied with the Arkansas sector in drilling activity.

The latest development of the Marion County Rodessa drilling was the completion late in December of H. B. Turner No. 1 Scuddy, midway between the Jefferson and Lodi areas. The test at a total depth of 6,025 feet, came in making an estimated 500 bbls. of oil per day. Success of the Turner well will bring considerable development to the area between the two producing pools. A movement on foot in December to petition the Texas Railroad Commission to designate the Jefferson and Lodi districts as separate from Rodessa resulted in announcement of a hearing to determine whether or not the separate ruling should be made.

Cass County operations in Rodessa during 1937 consisted for the most part in routine drilling on proven acreage. Outstanding, however, was a deep test United Gas Public Service Co. No. 1 Land, in the Potter Survey, which was drilled to a total depth of 7,255 feet, and, finding the lower horizons dry, plugged back to open new gas production at 6,520-25 feet. Other deep tests in the section were unsuccessful.

Rodessa—Arkansas

The year 1937 saw the Rodessa field extended into a third state, Arkansas, and subsequent drilling highlighted the field's development up to the close of the year. The McClanahan and others No. 1 Capps in section 11-20-28, topped the Hill sand at 5,903 feet, the Gloyd at 6,020 feet and saturated Mitchell sand was cored at 6,075-80 feet. The well was acidized and completed making 100 bbls. the first hour.

Up to the close of 1937, 51 producers were completed in the Miller County, Arkansas portion of the field. Rapid development of the area was spurred by the fact that the state of Arkansas placed no limits on production, and the new oil wells flowed in many cases unrestricted. By the last week in October a total of 30 wells had been completed, and production hit a high of 15,109 bbls. per day or an average per well daily flow of over 500 bbls. From that point, although additional completions were made with little let-up production gradually declined, due to the fact that pipe line purchasers curtailed runs, and also because the open flow of many of the producers brought a decrease in bottom hole pressure.

An agreement among the three pipe line companies serving the section to restrict crude takings to a maximum of 200 bbls. per well resulted in a production drop to approximately 10,000 bbls. by the end of the year, at which time the state placed in effect its first proration measures, limiting Rodessa production to approximately 200 bbls. top production per well.

ARKANSAS

Completions by County

County—	Comp.	Prod.	Dry	Gas
Ashley	1	0	1	0
Calhoun	2	0	2	0
Clark	5	0	5	0
Cleveland	3	0	3	0
Columbia	3	455	2	0
Cross	1	0	1	0
Dallas	2	0	2	0
Grant	1	0	1	0
Hempstead	8	0	8	0
Howard	1	0	1	0
LaFayette	5	0	5	0
Little River	3	0	3	0
Lonoke	1	0	1	0
Miller	62	43,068	8	0
Munroe	1	0	1	0
Nevada	27	1,928	11	1
Ouachita	10	70	8	0
Pike	2	0	2	0
Pulaski	1	0	1	0
Sevier	1	0	1	0
St. Francis	1	0	1	0
Union	41	22,974	10	0
Total, 1937	182	68,495	78	1
Total, 1936	89	7,319	60	5
Difference	93	61,176	18	4

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	6	150	4	0
February	11	430	8	0
March	10	748	7	0
April	7	403	2	1
May	16	1,770	10	0
June	15	3,561	10	0
July	18	5,097	10	0
August	22	6,492	6	0
September	9	4,006	4	0
October	30	22,898	10	0
November	21	8,350	4	0
December	17	14,590	3	0
Total, 1937	182	68,495	78	1
Total, 1936	89	7,319	60	5
Difference	93	61,176	18	4

Shuler Field

Indicative of the trend deeper exploration in the North Louisiana and Arkansas areas was the deep discovery of the Shuler field of Union County, Arkansas. The field, opened in April, 1937 was hailed as a major discovery, but subsequent deeper development greatly enhanced its value as a new reserve.

The discovery well of Shuler, Lion Oil Refining Co. and Phillips Petroleum Co. No. 1 Morgan, section 18-18-17, was completed in a sand at 5,537 feet, making 60 bbls. per hour on a three-quarters inch choke. Later development uncovered the existance of four sands ranging in depth from 5,500 to 5,900 feet. These sand bodies were defined in area, and lenticular and irregular in character.

The major discovery at Shuler, and one of the most important of the year occurred in September when E. M. Jones No. 1 Marine Oil Co. was completed in the Lower Travis Peak at 7,562 feet for a prolific producer. The pay was named the Jones sand. The well flowed at the rate of 2,648 bbls. per day on later unrestricted tests.

Result of the strike was the staking of numerous tests to go to the Lower Travis Peak, or what is termed the Lower Marine. Some of the shallow producers at Shuler were deepened to the new horizon. At the end of the year, 10 wells were flowing from the Jones sand, and the new Arkansas proration rules place top allowable at 400 bbls.

Still a third major discovery was made in the Shuler area. In mid-October the Lion Oil Refining Co. No. 1-A Marine was deepened below the Jones sand, which produces in the base of the Lower Travis Peak, and cored saturation in the top of the Permian lime. The well was brought in making 342 bbls. of 63.1 gravity distillate in 12 hours with estimated open flow of gas from 60 to 75 million feet. At the end of 1937 it remained the only producer in the Permian, or Reynolds lime which lies directly below the Jones sand in Shuler, although a test was drilling for the deep horizon.

Buckner Discovery

A third important discovery in Arkansas in 1937 was the opening of the Buckner field of Columbia County. The Standard Oil Co. of Louisiana No. 1 McKean in mid-October tested oil at total depth of 7,204 feet in Permian lime, and was completed several weeks later.

(Continued on Page 99)

ARKANSAS FIELDS DISCOVERED DURING 1937

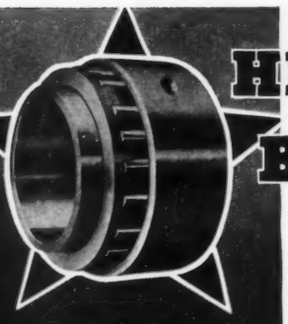
Field—	County	Location	Discovery well	Date of completion	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Buckner	Columbia	8-16s-22w	Standard Oil Co. of Louisiana	Nov. 30	1	.....	....	2,184
Rodessa Extension	Miller	11-20s-28w	W. L. McClanahan	June 12	57	.....	....	2,742
Shuler	Union	18-18s-17w	Lion Oil Refining Co.	Apr. 5	4	.....	....	3,336

ARKANSAS

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
BUCKNER:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	195	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,045	6,045
CHAMPAGNOLLE:													
Daily average	1,922	1,836	1,594	1,601	1,552	1,511	1,435	1,367	1,352	1,310	1,312	1,285	
Month	59,582	51,408	49,414	48,030	48,112	45,330	44,485	42,377	40,560	40,610	39,360	39,835	549,103
EL DORADO:													
Daily average	2,020	2,017	2,003	2,007	2,044	2,026	2,024	1,978	1,953	1,946	1,927	1,887	
Month	62,620	56,476	62,093	62,210	63,364	60,780	62,744	61,318	58,590	60,326	57,810	58,497	724,828
LISBON:													
Daily average	279	281	286	274	285	288	281	286	283	281	285	282	
Month	8,649	7,868	8,866	8,220	8,835	8,640	8,711	8,866	8,490	8,711	8,550	8,742	103,148
MILLER COUNTY (Miscellaneous):													
Daily average	445	570	539	546	531	502	494	477	455	454	447	373	
Month	13,795	15,960	16,709	16,380	16,461	15,060	15,314	14,787	13,650	14,074	13,410	11,563	177,163
NEVADA:													
Daily average	766	722	757	808	780	767	750	749	741	733	734	719	
Month	23,746	20,216	23,467	24,240	24,180	23,010	23,250	23,219	22,230	22,723	22,020	22,289	274,590
SCHULER:													
Daily average	.....	.....	.....	190	506	1,528	1,530	5,980	6,173	7,155	6,406	9,609	
Month	.....	.....	.....	5,700	15,686	45,840	47,430	185,380	185,190	221,805	192,180	297,879	1,197,090
SMACKOVER, Light:													
Daily average	2,067	2,098	2,109	2,112	2,163	2,165	2,160	2,144	2,173	2,077	2,079	2,022	
Month	64,077	58,744	65,379	63,360	67,053	64,950	66,960	66,464	65,190	64,387	62,370	62,682	771,616
SMACKOVER, Heavy:													
Daily average	16,069	17,143	16,860	16,813	17,025	16,973	17,055	17,136	16,928	16,974	16,706	16,405	
Month	498,139	480,004	522,660	504,390	527,775	509,190	528,705	531,216	507,840	526,194	501,180	508,555	6,145,848
STEPHENS:													
Daily average	593	603	555	549	570	572	577	588	586	577	575	566	
Month	18,383	16,884	17,205	16,470	17,670	17,160	17,887	18,228	17,580	17,887	17,250	17,546	210,150
TROY:													
Daily average	190	297	1,111	1,239	637	754	600	579	563	606	1,134	1,145	
Month	5,890	8,316	34,441	37,170	19,747	22,620	18,600	17,949	16,890	18,786	34,020	35,495	269,924
URBANA:													
Daily average	1,556	1,528	1,407	1,335	1,332	1,255	1,206	1,218	1,216	1,178	1,215	1,207	
Month	48,236	42,784	43,617	40,050	41,292	37,650	37,386	37,758	36,480	36,518	36,450	37,417	475,638
RODESSA (Miller County):													
Daily average	.....	.....	.....	.....	.....	.....	517	1,960	5,089	11,521	12,694	9,952	
Month	.....	.....	.....	.....	.....	.....	16,027	60,760	152,670	357,151	380,820	308,512	1,275,940
Daily average	25,907	27,095	27,221	27,474	27,425	28,341	28,629	34,462	37,512	44,812	45,514	45,647	33,373
Total 1937	803,117	758,660	843,851	824,220	850,175	850,230	887,499	1,068,322	1,125,360	1,389,172	1,365,420	1,415,057	12,181,083
Total 1936	935,115	858,313	925,815	895,830	928,419	894,930	911,927	898,442	842,940	875,998	849,960	879,656	10,697,345
Total 1935	974,175	861,588	950,336	917,520	967,262	933,810	944,942	939,703	907,260	932,201	895,320	914,469	11,138,586
Total 1934	987,412	875,224	958,489	918,810	920,850	923,820	985,738	973,400	937,260	948,073	918,480	1,011,902	11,359,458
Total 1933	993,457	880,208	493,702	909,120	928,667	901,770	946,926	971,292	953,580	1,017,885	986,910	1,016,118	11,449,635

AMERICAN HEAVY-DUTY ROLLER BEARINGS



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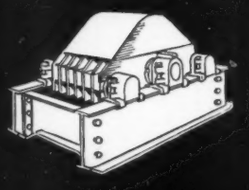

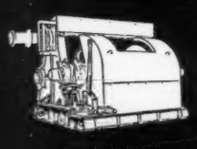

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American Bearings are very easy to install. A complete bearing is composed of three separate parts — the inner race or sleeve, outer race or casing, and cage. Adjusting shims are not needed; neither are threaded housing closures. Special designs are unnecessary.

2 Never Need Adjustment

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AMERICAN ROLLER BEARING CO.

PITTSBURGH, PA.

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Annual Review

K. M. A. AND AVOCA LEADERS IN NORTH AND CENTRAL TEXAS FIELDS

By MITCHELL TUCKER

After remaining dormant as a shallow stripper area for many years, the North Texas district came back in 1937 by opening up the largest field discovered in the entire country for that year, as well as adding three new producing fields and important production from lower beds in an old shallow field.

The North and West Texas district showed a substantial increase in successful development during 1937 as compared to the previous year. Although a total of 2,521 completions were made during the year, as compared with 2,654 for 1936, the aggregate initial production from new wells in 1937 was 257,395 bbls. daily as compared to only 179,181 bbls. in 1936. Dry holes during 1937 numbered 1,088 as compared with 1,196 in the previous year.

K.M.A. Rediscovered

Although the K.M.A. field was opened to deep production (3,600-4,000) feet in the Strawn-Bend series early in 1931 by the completion of Deep Oil Development Co. No. 1 Munger which had an initial production of 125 bbls. daily, the field was slow to develop and did not prove its true potentialities until in the last six months of 1937. For that reason, K.M.A. is rightfully considered a 1937 development. The new activity was started when the Producers Petroleum Co. completed its No. 78 First National Co. as a 700-bbl. producer in June. Up to that time a total of 13 wells had been drilled to the lower level in the six years since the field's discovery, and a total of 351,578 bbls. had been produced. At the close of the year, a total of 89 wells had been completed, and over 100 were drilling or rigging up. Total accumulated production for the field equaled 1,023,089 bbls. at that time.

Perhaps in no other field in recent years has so large an area been proven by so few wells in such a short time, as was done at K.M.A. in the last half of 1937. This was largely because all the inside leases had been held for years by the shallow production, and those wishing to prospect the area by wildcats were forced to drill from 1 to 5 miles from production. As a result, out of the 89 completions at the close of the year, only about 30 were inside locations at the time they were drilled. All others were staked as extension tests or semiwildcats, and added many acres to the proven area at the time of their completion.

As K.M.A. enters the new year its future is difficult to predict, as the productive limits have not been established on any side of the present proven area of over 50,000 acres. There remain from 3,000 to 4,000 proven but undrilled inside locations to be developed, and due to the wide diversity of lease ownership and the local demand for the crude, they will probably be drilled rapidly. Wildcatting, of course, will continue on all sides of the established area, and extending into other fields along the Electra-Bend arch in Wichita, Wilbarger and Archer counties.

NORTH TEXAS FIELDS DISCOVERED DURING 1937

Field—	County—	Discovery well—	Date—
Two miles NW of Oldham	Archer	Perry et al No. 1 Duckworth	February
Three miles N of Megargel	Archer	Thweet No. 1 Mead	July
	Clay	Sussex No. 1 Shumaker	July
Six miles N of Bellevue	Clay	Gaut No. 1 Worsham	May
One mile NE of Vernon	Wilbarger	King No. 1 Castleberry	October

Denton County

The Landers field of Denton County was opened in April by A. A. Landers on the Forrester lands in the S. Yoachum Survey, pumping 40 bbls. per day from an oil pay at 1,647 feet. No other wells were drilled during the year at Landers.

Collinsville Discovery

The Rapp Drilling Co. and others completed No. 1 Singletary, in the Quillen Survey, about 1 mile south of Collinsville in southwestern Grayson County, in early 1937 as the first producing area of that county. After drilling to 4,012 feet, the well was plugged back to 3,877 feet, shot and completed as a 25-bbl. producer.

In western Grayson County, Denver Producing & Refining Co. drilled two wells in the North Whitesboro area, both of which were disappointing. No. 1 Cannon estate found oil and made a small pumper at 2,392 feet, but was later abandoned because of inability to shut off water. No. 1 Moore, an offset to the north, failed to find showings in the Cannon level, and was abandoned. Other tests of this area are due in early in 1938.

Rock Crossing Deep

Perhaps 1937's most important discovery in North Texas, with the exception of the major K.M.A. field development, was the opening of deep pay in the old Rock Crossing pool of Wilbarger County by Phillips Petroleum Co. Its No. 51 Waggoner, H.&T.C. Survey, in the center of the former 1,200-foot-deep producing field, was drilled to a total depth of 3,071 feet and flowed at the rate of 375 bbls. per day in May, 1937. Seventeen producers have since been drilled to this level, proving at least 300 acres for production and adding an estimated reserve of 240,000 bbls. Later in the year, a deep producing level was added to the Greyback pool by W. W. McDonald No. 3-A Waggoner, H.&T.C. Survey, after topping the saturated Lower Canyon at 3,553 feet, and drilling

NORTH TEXAS

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
ARCHER COUNTY:													
Daily average	13,003	13,234	13,301	13,382	13,405	13,391	12,387	12,321	12,413	11,966	11,771	11,860	
Month	403,080	370,548	412,337	401,462	415,563	401,737	383,978	381,955	372,386	370,953	353,140	367,667	4,634,806
BAYLOR COUNTY:													
Daily average	2,093	1,943	1,883	1,904	1,871	1,889	1,670	1,623	1,603	1,566	1,530	1,529	
Month	64,870	54,416	58,374	57,112	58,015	56,682	51,783	50,312	48,094	48,549	45,913	47,402	641,522
CLAY COUNTY:													
Daily average	484	540	539	535	640	623	626	801	778	728	762	747	
Month	15,004	15,122	16,703	16,042	19,855	18,681	19,409	24,845	23,350	22,569	22,859	23,149	237,588
COOKE COUNTY:													
Daily average	7,112	7,450	7,788	7,849	7,944	7,911	7,227	7,612	7,612	7,227	6,578	6,962	
Month	220,475	208,592	241,416	235,464	246,270	237,326	224,032	235,964	228,357	224,039	197,348	215,822	2,715,105
FOARD COUNTY:													
Daily average	518	613	734	768	736	742	813	796	759	752	681	693	
Month	16,072	17,164	22,764	23,037	22,819	22,258	25,200	24,684	22,766	23,319	20,426	21,485	262,994
MONTAGUE COUNTY:													
Daily average	5,162	5,426	5,919	6,039	6,385	6,376	6,230	6,352	6,329	6,107	6,038	6,084	
Month	160,028	151,917	183,499	181,162	197,946	191,288	193,141	196,905	189,869	189,310	181,148	188,611	2,204,824
WICHITA COUNTY:													
Electra—													
Daily average	7,918	8,200	8,915	8,911	8,933	8,921	9,215	9,037	8,990	9,011	8,990	8,940	
Month	245,461	229,591	276,374	267,336	276,926	267,636	285,660	280,156	269,712	279,333	269,702	277,136	3,225,023
Burkburnett—													
Daily average	2,466	2,513	2,410	2,413	2,490	2,477	2,416	2,549	2,489	2,475	2,482	2,486	
Month	76,440	70,372	74,699	72,390	77,190	74,312	74,903	79,019	74,662	76,720	74,456	77,071	902,234
Iowa Park-K.M.A.—													
Daily average	1,939	2,016	1,962	1,976	2,012	2,015	3,118	3,305	3,711	4,070	4,236	4,575	
Month	60,111	56,440	60,822	59,283	62,376	60,442	96,652	102,450	111,337	126,161	127,080	141,817	1,064,971
Sunshine Hill—													
Daily average	611	630	610	616	620	617	615	687	607	590	588	590	
Month	18,939	17,649	18,916	18,472	19,217	18,519	19,072	21,297	1,821	18,283	17,636	18,282	208,103
Miscellaneous—													
Daily average	1,959	1,930	2,217	2,206	2,524	2,496	2,047	1,837	1,911	1,790	1,760	1,781	
Month	60,729	54,031	68,733	66,179	78,247	74,880	63,949	56,947	57,336	55,482	52,790	55,199	744,502
WILBARGER COUNTY:													
Daily average	8,891	9,065	9,278	9,512	9,664	9,652	9,663	10,038	10,054	9,672	9,430	8,890	
Month	275,607	253,817	287,611	285,349	299,585	289,571	299,559	311,184	301,631	299,820	282,902	275,590	3,462,226
YOUNG COUNTY:													
Daily average	11,683	12,389	12,290	12,266	12,389	12,401	11,654	11,706	12,003	11,693	11,599	11,476	
Month	362,176	346,889	380,997	367,990	384,050	372,022	361,271	362,891	360,076	362,495	347,970	355,761	4,364,589
Daily average	63,838	65,948	67,847	68,376	69,615	69,512	67,697	68,665	68,713	67,646	66,446	66,613	67,585
Total 1937	1,778,992	1,846,548	2,103,245	2,051,278	2,158,059	2,085,354	2,098,609	2,128,609	2,061,397	2,097,033	1,993,370	2,064,992	24,668,486
Total 1936	1,922,589	1,731,764	1,910,158	1,913,520	1,970,360	1,897,470	1,985,674	1,986,790	1,948,500	2,027,524	1,976,820	2,086,114	23,357,283
Total 1935	1,879,747	1,740,760	1,874,384	1,825,350	1,919,210	1,852,710	1,925,813	1,828,349	1,932,990	1,880,305	1,885,890	1,935,640	22,481,148
Total 1934	1,740,898	1,644,440	1,867,223	1,837,590	1,887,187	1,815,210	1,922,217	1,986,945	1,863,540	1,897,479	1,719,510	1,871,129	22,053,308
Total 1933	1,568,693	1,424,220	1,566,120	1,538,340	1,520,023	1,404,090	1,463,696	1,528,703	1,548,450	1,725,460	1,664,940	1,733,489	18,686,224

WELLS *HAVE* BEEN DRILLED WITH POOR MUDS

BUT OLD-FASHIONED DRILLING METHODS CANNOT COMPETE WITH MODERN TECHNIQUE

Old-fashioned mud control practices are as out of date as ancient drilling rigs and tools. Present-day operators find that many commonly encountered drilling difficulties can be eliminated or overcome by the use of BAROID Products.

AQUAGEL, by adding gel-forming colloidal material to muds, does much to eliminate the danger of stuck drill pipe and tools. It helps to keep water from entering the formation being drilled, thereby preventing sloughing of the hole.

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STABILITE reduces the viscosities of thick drilling muds, increases their wall-building properties and frees entrained gas. It reduces the danger of gas-cutting and consequent blow-outs.

BAROCO is practically unaffected by salt water, brine or other chemicals encountered in drilling and quickly builds a thin, impermeable wall which checks water from entering formations. One ton of BAROCO will make 40 barrels of excellent drilling mud.

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to a total depth of 3,654 feet. Initial production was 100 bbls. daily after acidizing.

Young County

Three and one-half miles south of the Nash and Windfohr field of Young County, Henry Zweifel and others opened the Zweifel field, west of Graham, on the E. S. Graham farm in the B.S.&F. Survey. The Caddo lime pay was topped at 3,471 feet and after taking 4 feet of penetration, and treating with 5,000 gallons of acid, an initial gauge of 106 bbls. was established by flowing. No further development has taken place.

Also in Young County, S. S. Alexander opened the Clark pool 3 miles southeast of Olney, on Mrs. K. D. Clark's land, in shallow sand drilled from 845-52 feet, from which 32 bbls. of oil was pumped in nine hours on completion test.

WEST CENTRAL TEXAS

The Avoca field of Jones and Shackelford counties was outstanding among the otherwise small discoveries in the West Central district during 1937.

PANHANDLE FIELDS DISCOVERED DURING 1937

Field—	County—	Discovery well—	Date—
Block B-2, section 187 H.&G.N.	Gray	Empire No. 1 Stevens	April
NE part of County	Moore	Magnolia Britian	February
NE part of County	Moore	Phillips No. 1 McDowell	July

The Avoca discovery was made in June, 1937, by the Iron Mountain Oil Co. on the C. A. Olander land in B.B.B.&C. Survey of Jones County, 3 miles east of the town of Avoca. Its production is coming from the Canyon series in the Palo Pinto lime, a porous section of which is drilled at about 3,240 feet. After acidizing, the discovery well flowed 800 bbls. on a three-hour potential test. Subsequent tests indicated the well capable of producing possibly 10,000 bbls. daily if opened wide. The discovery well was immediately offset on three sides, and first extension was afforded the field to the north in Fain & McGaha and others No. 1 Olson, which flowed 75 bbls. the first hour, from the same Palo Pinto saturation at 3,213-16 feet. In early December a still more important extension was indicated for the field, this time 5 miles northeast into Shackelford County near the old shallow Ivy pool. The question still exists as to whether or not the two areas are interconnected, however. Owens-Snebold and others No. 1 H. B. Haterius, B.B.B.&C. Survey, found saturated Palo Pinto limestone, about 100 feet higher than at Avoca, and set 6-inch casing at 3,212 feet. On preliminary tests at the close of the year this possible 5-mile extension flowed 15 bbls. hourly. Should the two areas prove to be a common structure, approximately 4,000 acres will be productive from known geological data, yielding possibly 40,000,000 bbls. ultimately.

New gas production added from the 156 completions during the year totaled 5,965,700,000 feet in potential flow. The increasing load of natural gas to the eastern and northern markets was particularly noticeable during the year, representing a gain of over 36,000,000,000 feet for the year 1937 over the previous year.

No new fields were added, although sizeable ad-

WEST CENTRAL TEXAS FIELDS DISCOVERED DURING 1937

Field—	County	Discovery well	Date of completion	No. wells comp. to date	Well spacing	Initial producing capacity— Bbls.	Test	Size choke
Avoca	Jones	Iron Mountain Oil Co. No. 1 Olander	7- 4-37	3	330-660	1,537	24 hrs.	¾" choke
Leeray	Eastland	Hickok Prod. & Drlg. Co. No. 1 Van Paemer	10-31-37	..	150-300	941	21 hrs.	2" choke
Martin	So. Young	Hickok & Reynolds No. 1 Martin	10-14-37	..	150-300	279	3 hrs.	flowing
Robertson	So. Young	Bennett Pet. Corp. No. 1 Robertson	8-14-37	..	150-300	221	24 hrs.	pump
Sec. 266	Coleman	Anzac Oil Corp. No. 1-J Morris	6-20-37	..	150-300	222	24 hrs.	pump
Sec. 37, Blk. 15	Jones	Fain-McGaha No. 1 Lewis	4-21-37	..	150-300	82	24 hrs.	pump
Sec. 1, Blk. 44	So. Young	Henry Zweifel No. 1 Graham	6-25-37	..	150-300	94	24 hrs.	flowing
Sec. 159	Shackelford	Owens-Snebold No. 1 Ivy	1-31-37	..	150-300	353	24 hrs.	flowing

CENTRAL TEXAS

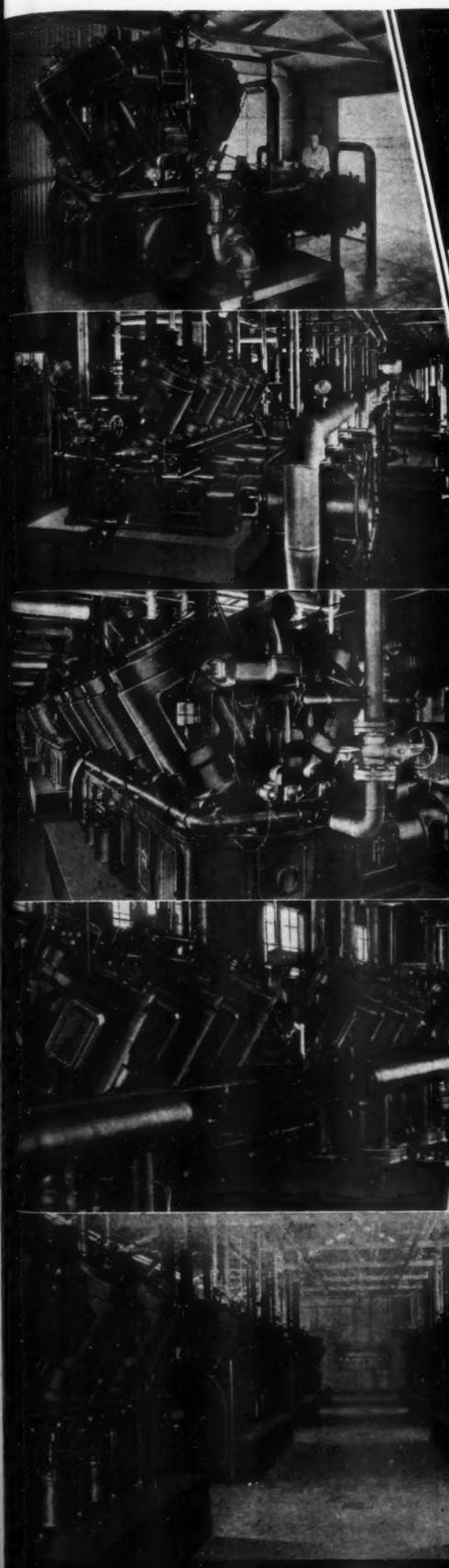
Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
BROWN COUNTY:													
Daily average	1,671	1,743	1,732	1,741	1,712	1,718	1,729	1,727	1,746	1,700	1,652	1,702	
Month	51,812	48,790	53,678	52,238	53,066	51,439	53,596	53,525	52,393	52,695	49,558	52,766	625,556
CALLAHAN COUNTY:													
Daily average	1,499	1,542	1,502	1,506	1,485	1,492	1,426	1,400	1,401	1,373	1,347	1,382	
Month	46,459	43,189	46,561	45,193	46,048	44,758	44,195	43,410	42,015	42,562	40,404	31,229	516,023
COLEMAN COUNTY:													
Daily average	1,023	1,066	1,037	1,023	1,078	1,069	1,079	1,089	1,072	998	992	1,007	
Month	31,723	29,852	32,162	30,692	33,415	32,070	33,442	33,762	32,173	30,950	29,753	31,210	381,204
COMANCHE COUNTY:													
Daily average	58	93	87	81	70	76	38	38	37	36	49	39	
Month	1,809	2,615	2,687	2,425	2,183	2,289	1,168	1,178	1,118	1,118	1,470	1,202	21,262
EASTLAND COUNTY:													
Daily average	2,831	2,878	2,970	2,864	2,837	2,852	2,745	2,757	2,736	2,695	2,725	2,783	
Month	87,758	80,589	92,073	85,930	87,935	85,563	85,087	85,470	82,068	83,540	81,760	86,281	1,024,054
ERATH COUNTY:													
Daily average	98	91	106	101	99	99	106	93	99	99	101	97	
Month	3,038	2,561	3,288	3,028	3,084	2,982	3,287	2,868	2,996	3,072	3,029	3,007	36,240
FISHER COUNTY:													
Daily average	3,517	3,523	3,404	3,261	3,345	3,386	3,375	3,440	3,472	3,531	3,566	3,594	
Month	109,030	98,642	105,524	97,826	103,688	101,576	104,640	106,642	104,167	109,446	106,988	111,426	1,259,595
HASKELL COUNTY:													
Daily average	19	15	7	14	15	16	11	12	13	14	21	17	
Month	581	417	211	424	466	472	338	386	405	426	636	519	5,281
JACK COUNTY:													
Daily average	5,580	6,800	8,102	8,718	9,458	9,216	8,928	8,890	9,460	9,931	6,003	9,310	
Month	172,989	190,414	251,164	261,551	293,208	276,473	276,765	275,586	283,813	307,855	280,102	288,599	3,158,519
JONES COUNTY:													
Daily average	4,704	5,248	5,443	5,740	5,949	7,028	6,793	7,426	7,531	7,417	6,571	7,211	
Month	145,820	146,930	168,733	172,204	184,426	210,837	210,592	230,210	225,941	229,921	197,136	223,540	2,346,290
PALO PINTO COUNTY:													
Daily average	345	355	326	321	318	320	308	300	315	281	322	296	
Month	10,696	9,931	10,117	9,630	9,850	9,608	9,543	9,308	9,453	8,734	9,656	9,177	115,703
SHACKELFORD COUNTY:													
Daily average	7,233	7,369	7,272	7,211	7,212	7,228	7,030	6,921	6,927	6,805	6,513	6,739	
Month	224,212	206,324	225,447	216,326	223,581	216,831	217,927	214,537	207,809	210,969	195,400	208,899	2,568,262
STEPHENS COUNTY:													
Daily average	4,219	4,235	4,270	4,140	4,097	4,109	3,961	3,972	4,003	4,036	4,095	4,056	
Month	130,799	118,576	132,355	124,212	127,017	123,270	122,799	123,130	120,086	125,112	122,850	125,742	1,495,948
TAYLOR:													
Daily average	56	58	56	74	67	69	72	71	66	68	70	67	
Month	1,727	1,629	1,748	2,228	2,080	2,077	2,226	2,216	1,971	2,116	2,089	2,083	24,190
THROCKMORTON:													
Daily average	391	439	434	418	424	416	410	395	366	371	365	369	
Month	12,140	12,302	13,452	12,540	13,138	12,476	12,710	12,256	10,974	11,506	10,952	11,440	145,886
Daily average	33,245	35,456	36,748	37,215	38,167	39,091	38,010	38,532	39,246	39,356	37,726	38,294	37,600
Total 1937	1,030,593	992,761	1,139,200	1,116,447	1,183,185	1,172,721	1,178,315	1,194,484	1,177,382	1,220,022	1,131,783	1,187,120	13,724,013
Total 1936	888,801	805,562	873,270	880,650	938,339	918,780	1,011,902	980,127	1,001,520	1,004,369	985,260	1,008,771	11,297,351
Total 1935	904,766	778,204	905,758	862,290	908,889	875,220	895,466	897,760	877,560	900,798	878,040	887,220	10,571,971
Total 1934	835,326	819,308	919,243	856,440	913,260	900,300	937,502	938,339	905,100	940,013	889,500	904,053	10,758,384
Total 1933	687,859	931,260	698,678	664,980	676,420	610,350	639,623	650,566	641,490	102,305	695,010	706,459	8,005,000

TEXAS PANHANDLE

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
CARSON COUNTY:													
Daily average	5,866	6,762	6,785	6,760	7,807	7,862	7,216	7,642	7,678	7,209	6,911	6,983	
Month	181,846	189,336	210,335	202,800	242,019	235,854	223,702	236,911	230,336	223,482	207,339	216,468	2,600,428
GRAY COUNTY:													
Daily average	31,892	35,883	35,972	36,469	40,062	41,117	38,526	38,512	37,409	36,373	34,756	34,691	
Month	988,652	1,004,724	1,115,132	1,094,070	1,241,930	1,233,521	1,194,308	1,193,880	1,122,270	1,127,569	1,042,673	1,075,427	13,434,156
HUTCHINSON:													
Daily average	16,916	19,084	19,975	20,207	22,742	23,470	21,510	21,895	21,942	22,112	21,162	21,726	
Month	524,396	534,352	619,225	606,210	704,991	704,111	666,818	678,745	658,266	685,470	634,874	673,497	7,690,955
MOORE COUNTY:													
Daily average	1,345	1,401	1,486	1,451	1,307	1,315	1,320	1,266	1,390	1,381	1,387	1,340	
Month	41,695	39,228	46,066	43,530	40,529	39,441	40,923	39,254	41,694	42,814	41,610	41,539	498,323
WHEELER COUNTY:													
Daily average	11,488	11,120	12,127	11,217	12,019	12,117	10,787	11,955	10,482	9,450	7,882	6,987	
Month	356,128	311,360	375,937	336,510	372,593	363,518	334,397	370,611	314,471	292,947	236,467	216,600	3,881,539
Daily average	67,507	74,250	76,345	76,104	83,937	85,882	79,360	81,271	78,901	76,525	72,099	71,727	77,101
Total 1937	2,092,717	2,079,000	2,366,695	2,283,120	2,602,062	2,576,445	2,460,148	2,519,401	2,367,037	2,372,282	2,162,963	2,223,531	28,105,401
Total 1936	1,918,900	1,702,039	1,908,856	1,855,770	2,009,203	1,841,880	1,924,201	1,908,918	1,834,170	1,920,202	1,883,700	1,923,271	22,631,110
Total 1935	1,833,743	1,725,864	1,974,173	1,801,110	1,893,790	1,796,910	1,847,135	1,685,294	1,632,300	1,721,740	1,837,920	1,917,040	21,667,009
Total 1934	1,310,432	1,386,644	1,714,982	1,656,600	1,805,471	1,716,090	1,871,253	1,844,872	1,740,330	1,772,549	1,724,940	1,808,757	20,352,910
Total 1933	1,374,416	1,227,268	1,515,280	2,395,450	1,385,204	1,299,000	1,557,719	1,559,176	1,346,250	1,425,163	1,189,320	1,329,280	16,603,526



Save with the XVG

(GAS-ENGINE-DRIVEN COMPRESSOR)

ON INSTALLATION

The XVG is shipped fully-assembled as a one-piece, compact, easily-handled machine. Because of its smooth-running balance, and single-unit construction, it requires only a simple foundation of about ½ the size required by machines of older design.

ON OPERATING ECONOMY

The four-cycle XVG engine is very economical in fuel gas and lubricating oil consumption. Direct power transmission from power to compressor cylinders effects a high mechanical efficiency. Compressor cylinders are adequately valved for low gas or air speeds and are provided with thorough water-jacketing, resulting in efficient compression.

ON PLANT FLEXIBILITY

The multi-cylinder four-cycle XVG engine will run equally well at any point between full and no load. The engine permits automatic or hand adjustable speed control between full speed and half speed. The multiple arrangement of compressor cylinders offers various easy means for further capacity and pressure regulation.

ON RELOCATION

When it is necessary to move a compressor to a new location, the old foundation is a total loss. With the XVG this loss is cut in half due to the small size and simple foundation. There is an additional saving, since the unit does not have to be dismantled and reassembled for relocation.

ON OBSOLESCENCE

The XVG is the leader in gas-engine-driven compressor design and promises to retain this position. Small inertia forces, smooth running-balance, full force-feed lubrication, sturdy construction and conservative rating are all sound reasons why XVG's do not become "prematurely" worn out.

ON MAINTENANCE

Due to its original design and numerous refinements, not to be found in any other engine of this type, the wear of any parts in the XVG is remarkably little. When repairs become necessary, the parts are small and inexpensive, and the replacements are easily made.

Ingersoll-Rand offers a long list of equipment for oil field and refinery service. There are Cameron pumps for pipe lines, hot-oil charging and a large variety of specially-designed pumps for refineries. There are also Diesel engines, portable compressors, rock drills, pneumatic tools, etc., for oil field use.

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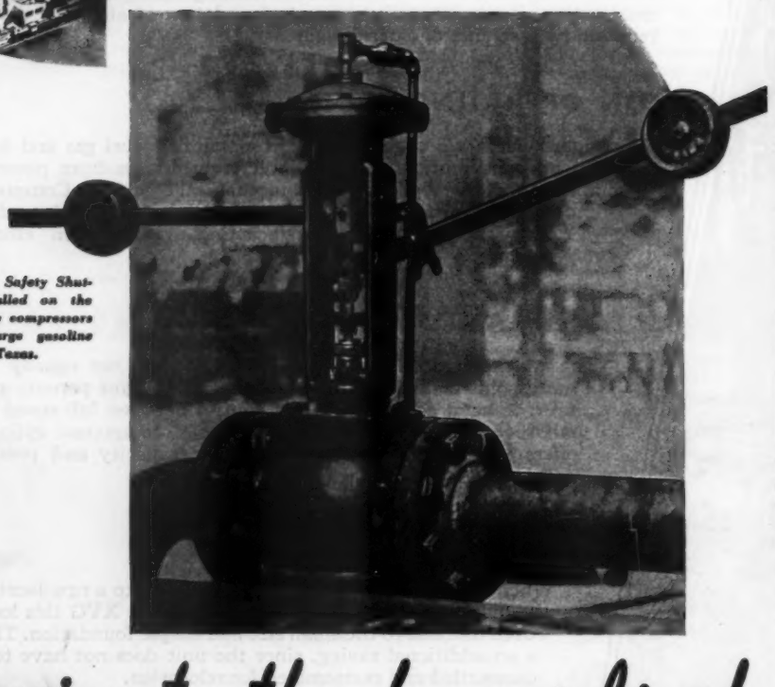

FISHER Type 10-L Safety Shut-Off Regulator installed on the gas fuel line to the compressors in one of the large gasoline plants at Conroe, Texas.

Eliminate the hazards of

PRESSURE FAILURE OR EXCESSIVE PRESSURE

Play Safe with FISHER Automatic SHUT-OFF VALVES

WHEREVER human life or equipment would be endangered in case the system pressure rises above a maximum point or drops below a minimum point, there is a need for FISHER Automatic Shut-Off Valves. The Type 10-L shown above automatically closes with an increase of pressure on the diaphragm while the Type 10-K automatically closes with a loss of pressure on the diaphragm.

Both the 10-L and the 10-K are direct operating types. They are capable of extremely long service life due to their simple design and very few working parts. The knock-out linkage is positive in operation and, when the lever knocks out on either type, it develops an extra force to hold the inner valve in its closed position. The leverage must be manually re-set to again start the flow of gas or fluid through the body.

The Type 10-L which closes with an increase of pressure on the diaphragm gives positive protection to meters, burners, and similar equipment against excessive pressures.

The Type 10-K which closes with a loss of pressure is used extensively on gas burner installations to eliminate the explosion hazard which would exist if the pressure should be lost and re-established before the pilot had been re-lighted.

Both type Valves are available in ¾" to 6" sizes and for all standard pressure conditions. For complete details on these FISHER Regulators and other Automatic Gas Controls write for Catalog 32-B.

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ditions to the proven gas- and oil-producing areas were made in Hutchinson and Moore counties.

Approximately 400,000 acres were added to the leased area, extending up into the northernmost tier of Panhandle counties. Continued wildcatting to deeper levels is expected during the coming year.

Important extensions were made in the Orlando field of Jones County, adding 600 acres to the productive area.

Fain & McGaha of Wichita Falls opened a new Bluff Creek sand field in July, known as the Lewis pool in east central Jones County. Saturation was found at 1,917-20 feet and 1,926-35 feet, testing 82 bbls. per day by pumping. Location was in section 37, Block 115, T.&P. Survey, 5½ miles northeast of Hawley and 2½ miles south of the Sandy Ridge pools. At the close of the year six producers had been completed, and an important northern extension was in the process of completion, proving a total of about 400 acres to production.

In Eastland County the early part of the year, Barnett Petroleum Co. brought in its No. 1 L. C. Downtain in the E.T.R.R. Survey for a 35-bbl. well at a total depth of 1,494 feet, 12 feet into the pay sand.

CENTRAL AND NORTH TEXAS DISTRICTS

Completions by County

County—	Comp.	Prod.	Dry	Gas
Archer	338	8,453	223	0
Baylor	12	40	10	0
Brown	19	630	8	2
Callahan	47	175	31	2
Clay	63	4,962	37	0
Coleman	20	350	13	4
Collin	3	0	3	0
Cooke	196	6,853	66	2
Denton	19	140	14	3
Eastland	31	1,256	14	7
Erath	4	195	1	0
Foard	5	2,830	2	0
Grayson	42	7,162	15	0
Hamilton	2	0	2	0
Haskell	3	0	3	0
Hardeman	1	0	1	0
Jack	398	83,289	79	8
Knox	1	0	1	0
McCulloch	1	0	1	0
Montague	125	7,152	36	3
Palo Pinto	8	30	4	3
Parker	1	0	1	0
Shackelford	215	9,008	111	4
Stephens	12	211	5	2
Throckmorton	17	10	10	3
Wichita	392	64,301	120	0
Wilbarger	115	20,729	35	0
Wise	3	0	3	0
Young	399	39,619	239	3
Total 1937	2,521	257,395	1,088	46

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	210	12,591	103	8
February	206	16,117	99	3
March	255	28,446	107	4
April	223	17,376	89	5
May	212	12,692	88	5
June	265	27,531	123	2
July	250	24,311	110	5
August	135	14,166	67	4
September	228	27,710	94	2
October	173	22,202	72	3
November	170	23,361	71	3
December	165	30,892	65	2
Total 1937	2,492	257,395	1,088	46
Total 1936	2,654	179,187	1,196	40
Difference	162	78,208	108	6

TEXAS PANHANDLE

The Panhandle district of Texas also found 1937 to be a busy year, as the total number of completions jumped from 650 in 1936 to 830 in the year 1937. Of this number of completions last year, 641 were oil wells having an aggregate initial production of 312,029 bbls. per day on potential tests, 33 were dry (many of which were wildcats) and 156 were gas wells within the proven areas.

Three carbon black plants and two new gasoline plants were added during the year to Panhandle's vast natural gas industry. Carbon black plants now number 33, with a total burning capacity of 978,000,000 feet per day. The gasoline plants number 46, with a daily capacity of 2,539,580,000 feet.

TEXAS PANHANDLE

Completions by County

County—	Comp.	Prod.	Dry	Gas
Carson	103	40,477	9	20
Childress	1	0	1	0
Collingsworth	2	0	2	0
Deaf Smith	1	0	1	0
Gray	277	131,308	5	8
Hansford	1	0	0	1
Hartley	1	0	0	1
Hutchinson	309	137,329	5	19
Moore	96	549	1	92
Potter	3	0	0	3
Wheeler	36	2,366	9	12
Total 1937	830	312,029	33	156

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	55	17,263	2	12
February	47	18,235	0	12
March	55	22,024	5	7
April	62	21,493	3	11
May	49	16,254	0	15
June	67	29,933	0	9
July	80	30,065	3	17
August	72	28,624	3	13
September	71	29,182	4	14
October	104	31,562	5	22
November	79	33,771	3	10
December	89	33,623	2	14
Total 1937	830	312,029	33	156
Total 1936	650	254,352	23	161
Difference	180	57,677	10	5

North Louisiana Fields

(Continued from Page 92)

No. 1 McKean was completed for 19 bbls. per hour and is being held to an average of less than 400 bbls. per day. It is the only producer in the new field to date, but numerous other tests are projected, and Buckner will probably see considerable development early in 1938.

NORTH LOUISIANA

Completions by Parish

Parish—	Comp.	Prod.	Dry	Gas*
Bienville	10	0	4	6
Bossier	40	1,408	8	15
Caddo	226	46,767	33	18
Caldwell	3	0	3	0
Claiborne	130	99,403	6	3
De Soto	22	247	17	2
Franklin	3	0	3	0
Grant	14	257	8	0
Jackson	1	0	1	0
La Salle	23	853	6	0
Lincoln	25	16,963	6	0
Morehouse	20	0	1	19
Natchitoches	4	0	4	0
Ouachita	22	0	1	21
Red River	16	603	3	3
Richland	1	0	1	0
Sabine	30	403	16	2
Tensas	5	0	5	0
Union	46	0	0	46
Webster	32	11,668	4	2
West Carroll	3	0	3	0
Winn	4	0	3	1
Total, 1937	680	178,572	136	138
Total, 1936	648	348,924	115	127
Difference	32	170,352	21	11

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	37	6,912	10	8
February	22	2,279	9	4
March	36	5,065	7	5
April	45	5,407	13	7
May	71	16,022	17	6
June	66	19,358	8	11
July	85	22,154	16	19
August	76	25,136	15	25
September	70	30,154	6	16
October	58	14,900	14	7
November	57	16,940	7	17
December	57	14,245	14	13
Total, 1937	680	178,572	136	138
Total, 1936	648	348,924	115	127
Difference	32	170,352	21	11

*Gas production: Bienville, 173,550,000 feet; Bossier, 354,600,000 feet; Caddo, 170,850,000 feet; Claiborne, 17,000,000 feet; De Soto, 11,000,000 feet; Morehouse, 84,000,000 feet; Ouachita, 37,000,000 feet; Sabine, 12,000,000 feet; Union, 390,000,000 feet; Webster, 54,000,000 feet. Total, 1,304,000,000 feet.

North Louisiana—Lisbon

The Lisbon field of Claiborne and Lincoln parishes, North Louisiana, was discovered at the close of 1936, and the first half of 1937 saw its most rapid development. Producing from the Pettit lime in the Lower Glen Rose, its productivity is variable over the extent of the 3,130 acres proven. No dry holes have defined it on any side, but some edge wells show marginal production due to characteristics of the lime, and one well in the field has been abandoned after producing small quantities of oil for several weeks.

During 1937, 160 oil wells were completed in Lisbon. Production, however, was curtailed in the last half of the year, by decreased purchases of the two pipe lines serving the field. At the end of 1937, however, full allowable of 10,000 bbls. was again being taken, and prospect for a third line under way gives promise of continued production at that rate.

The extension of proven production at Lisbon has been gradual throughout most of its development, and no major outposts were brought in to greatly enlarge the field. At the end of December, some of the best producers were completed on the south and southwest edges of the area.

Sugar Creek—Claiborne Parish

The northern flank of the old Sugar Creek gas field saw the discovery of oil in the first half of 1937 as Sugar Creek Syndicate No. 1 Brown was deepened from the gas horizon to an Upper Travis Peak sand for a producer. Other gas wells were subsequently deepened and completed as oil wells. At the close of the year an important wildcat is drilling in the area between Sugar Creek and Lisbon.

Cotton Valley—Webster Parish

The deepest important production opened during the year was the Bodcaw gas and distillate sand at Cotton Valley. Discovered early in January by the Ohio Oil Co. in No. 1 Bodcaw Lumber Co. production in the sand has been greatly extended. The discovery well made 235 bbls. per day of 59 gravity distillate with 3,000,000 feet of gas. Pressures in the deep 8,100-foot horizon are high, and high bottom hole temperatures are also encountered. Despite the depth and difficulties of drilling in the field, 20 producers were added in the Bodcaw sand during the year and nearly that number were drilling towards it at the close of the period.

Miscellaneous Discoveries

In addition to the discovery of oil in a new DeSoto Parish field, seven new gas fields were brought to light in 1937. The Ramsey pool was discovered by Pullman Oil Co. in its No. 1-A Ramsey in section 36-11-11 in July, but later tests drilled in the area failed. The discovery well produces from the Woodbine sand at 2,961 feet.

Gas discoveries made in 1937 included new fields in Lincoln and Bienville parishes, Louisiana, and Shelby and Panola counties, East Texas. In Lincoln Parish, Lide & Greer No. 1 Causey, a deepened test from the Glen Rose, found gas and distillate in the Travis Peak.

Bienville Parish gained the Lake Bisteneau field when DeSoto Oil & Gas Co. completed No. 1 Dunn at 5,235 feet for 40,000,000 feet of gas. Another gas field was opened by the Seaboard Oil Co. in No. 1 McGee, which was completed in March for 70,000,000 feet of gas at 7,400 feet. Like the Causey No. 1 in Lincoln Parish, the No. 1 McGee, which was discovery well of the Bear Creek field, was deepened from an old abandoned test in the Glen Rose to the Travis Peak.

In the same parish, Lide, Greer & Marr No. 1 Smelley discovered further gas in the Travis Peak making 50,000,000 feet of gas after plugging back to 7,193 feet from a total depth of 7,693 feet.

Shelby County, in the East Texas border section

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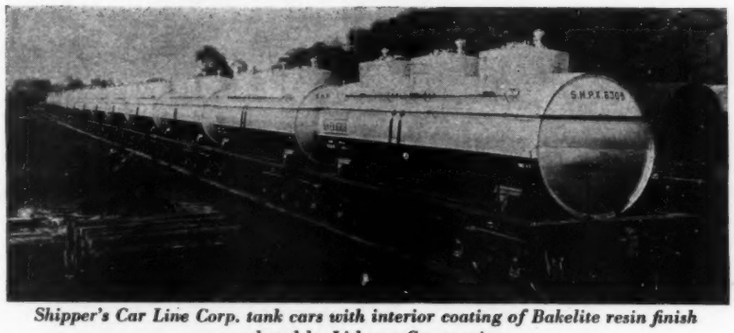

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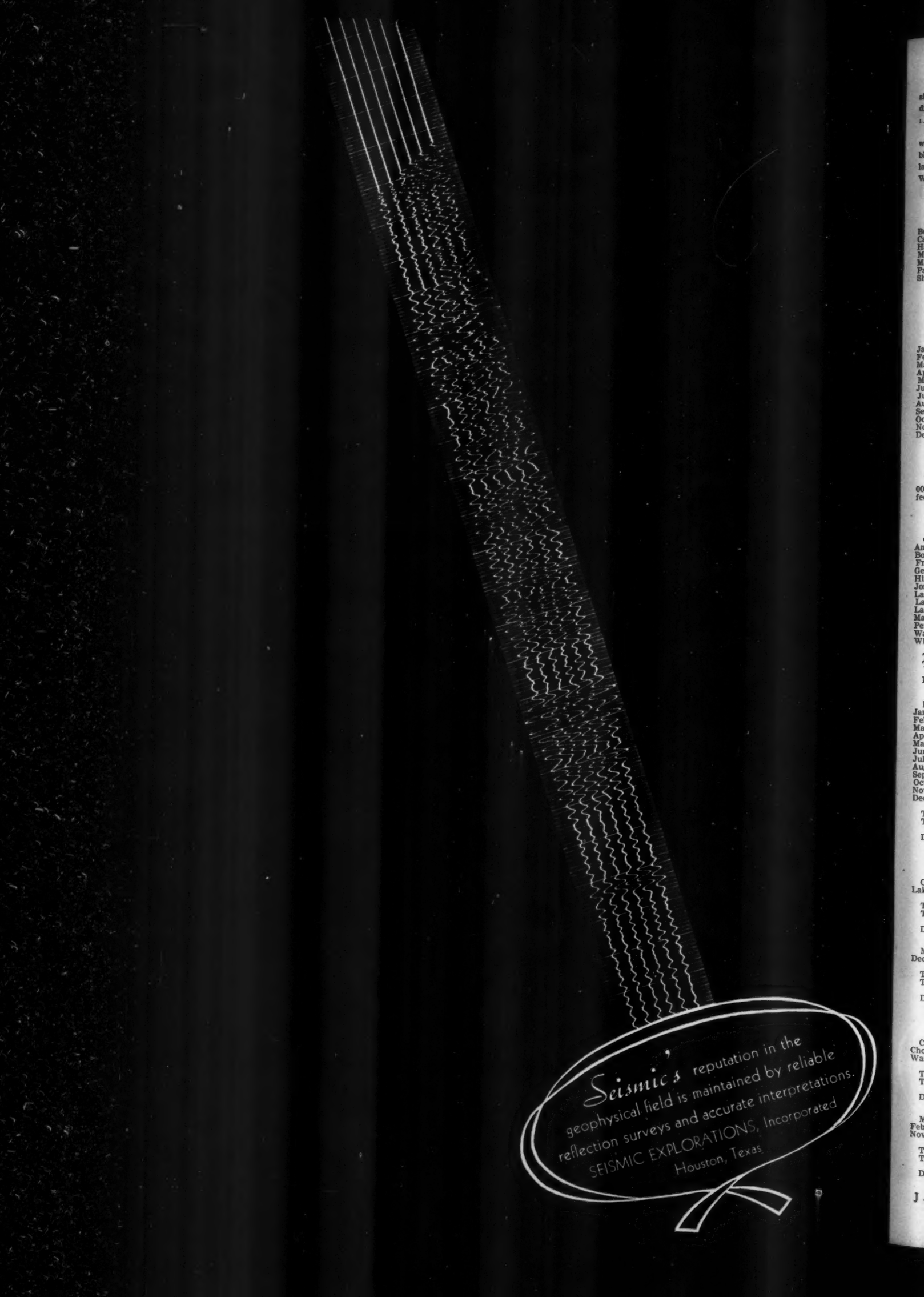
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showed gas possibilities in the Paluxy sand when Redditt and Gray's No. 1 Pickering showed wet gas at 4,100 f...

In Panola County, Texas additional gas production was indicated as the Arkansas Fuel Oil Co. No. 1 Abney blew out at the end of the year at 4,820 feet making large volumes of gas. The test is located west of the Waskom field.

EAST TEXAS (Border Counties)

Completions by County

County—	Comp.	Prod.	Dry	Gas*
Bowie	6	0	6	0
Cass-Rodessa	187	75,481	5	10
Harrison	20	292	2	0
Marion-Rodessa	37	19,798	0	2
Marion-Other	23	445	13	2
Panola	9	54	4	1
Shelby	7	0	3	4
Total, 1937	289	96,070	33	19
Total, 1936	194	107,003	22	10
Difference	95	10,933	11	9

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	27	12,117	1	2
February	31	15,294	1	2
March	33	13,548	4	0
April	31	8,290	4	3
May	27	7,550	4	3
June	31	9,503	3	3
July	24	7,288	3	1
August	21	5,326	2	1
September	20	3,821	7	0
October	13	3,168	3	1
November	18	5,990	0	3
December	13	4,175	1	0
Total, 1937	289	96,070	33	19
Total, 1936	194	107,003	22	10
Difference	95	10,933	11	9

*Gas production: Cass, 190,500,000 feet; Marion, 66,000,000 feet; Panola, 5,000,000 feet; Shelby, 40,000,000 feet. Total, 301,500,000 feet.

MISSISSIPPI

Completions by County

County—	Comp.	Prod.	Dry	Gas
Amite	1	0	1	0
Bolivar	2	0	2	0
Franklin	1	0	1	0
George	1	0	1	0
Hinds	5	0	2	3
Jones	2	0	2	0
LaFayette	1	0	1	0
Lamar	6	0	6	0
Lauderdale	1	0	1	0
Madison	1	0	1	0
Perry	1	0	1	0
Washington	1	0	1	0
Wilkinson	3	0	3	0
Total, 1937	26	0	23	3
Total, 1936	17	0	13	4
Difference	9	0	10	1

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
January	3	0	3	0
February	3	0	3	0
March	2	0	2	0
April	1	0	1	0
May	2	0	0	2
June	1	0	1	0
July	0	0	0	0
August	6	0	6	0
September	1	0	0	1
October	2	0	2	0
November	1	0	1	0
December	4	0	4	0
Total, 1937	26	0	23	3
Total, 1936	17	0	13	4
Difference	9	0	10	1

FLORIDA

Completions by County

County—	Comp.	Prod.	Dry	Gas
Lake	1	0	1	0
Total, 1937	1	0	1	0
Total, 1936	0	0	0	0
Difference	1	0	1	0

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
December	1	0	1	0
Total, 1937	1	0	1	0
Total, 1936	0	0	0	0
Difference	1	0	1	0

ALABAMA

Completions by County

County—	Comp.	Prod.	Dry	Gas
Choctaw	1	0	1	0
Washington	1	0	1	0
Total, 1937	2	0	2	0
Total, 1936	4	0	4	0
Difference	2	0	2	0

Completions by Month

Month—	Comp.	Prod.	Dry	Gas
February	1	0	1	0
November	1	0	1	0
Total, 1937	2	0	2	0
Total, 1936	4	0	4	0
Difference	2	0	2	0

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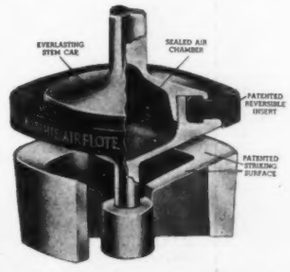

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Annual Review

DEEP DISCOVERIES, NEW POOLS AND EXTENSIONS MARK BIG YEAR

By DAL DALRYMPLE

The 1937 record of the petroleum industry in Oklahoma stands out as superior in many respects to that of 1936. While no large fields were discovered during the past year, many discoveries were recorded and several proven areas were extended. Deep discoveries were a feature. Both the total number and percentage of discoveries exceeded the 1936 record, and the number of completed wells in all fields registered an increase.

Only in the important matter of initial yield of completed wells did 1936 set the pace for 1937.

Here is how statewide activity for the two years compare:

A total of 49 wildcat wells found either oil or gas production in 1937, opening new pools or extending older areas, as against 34 wildcat producers completed in 1936.

Some 34 wildcats were completed as oil producers the past year, with 23 such completions the preceding year.

The percentage of wildcats completed as oil wells in 1937 was 14.4, with a percentage of only 12.9 in 1936.

Wildcats completed as gas wells in 1937 totaled 15, only 11 wildcat gas wells being completed the preceding year.

This was a percentage of 6.4 wildcat gas wells for the past year, against a percentage of 6.1 two years ago.

The percentage of wildcat failures recorded in 1937, then, was 79.2, while the 1936 percentage of failures was 81.0.

A total of 236 wildcats were completed in the last 12 month period, the total for 1936 being 179.

The total of all wells, both outposts and those in proven areas, completed in 1937 was 2,672, which was 107 more than the 2,565 completions of 1936.

However, those 2,672 completed wells of 1937 had initial production totaling only 677,156 bbls. while the 2,565 wells completed in 1936 had total initial yield of 1,264,939 bbls.

This is accounted for in the decline of initial production in three major producing counties:

Oklahoma County completions in 1936 had initial production totaling 510,399 bbls. or 405,909 bbls. more than total initial yield of wells completed in 1937.

Pontotoc County's initial production declined from 394,725 bbls. two years ago to 243,137 bbls. last year, a drop of 151,588 bbls.

Osage County completions initialed 82,082 bbls. in 1936, or 69,764 bbls. more than the 1937 total.

Total initial production of all other counties in 1937 exceeded that of 1936.

In the longer range comparison of a 6-year period the 1937 record also looks good. Total completions exceeded those of any year since 1930, and the initial production was larger than that of 1932, 1933 and 1934, being surpassed by the initial production of 1931, 1935 and 1936.

Daily average production held fairly steady during the year. Declines in proven areas were offset by pro-

OKLAHOMA FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Air Port	Tulsa	35-20-13	Gubser No. 1 fee	Jan. 10	53	Bartlesville	1,000	....
Bethel, North	Seminole	36-10-7e	Amerada Petroleum Corp.	Oct. 28, 1936	30	Cromwell	3,647	1,400
Citra	Hughes	33- 4-9e	Carter Oil Co.	July 9	1	McLish	6,177	192
Cromwell, South	Seminole	28-10-8e	Sinclair Prairie Oil Co.	Apr. 6	4	Simpson	4,189	380
Dora	Seminole	29- 7-6e	Malernee-Shell	Dec. 3, 1936	17	Senora	2,950	150
Doyle, deep sand	Stephens	12-1-5w	Helmerich-Payne	June	4	Hoxbar	3,870	68
Fitts, Cromwell	Pontotoc	29- 2-7e	E. H. Moore, Inc.	Feb. 1	107	Cromwell	2,615	108
Fitts, South	Pontotoc	33- 2-7e	E. H. Moore, Inc.	Apr. 6	11	Hunton	5,200	102
Fitts, South, Gilcrease	Pontotoc	20- 2-6e	Simpson-Roodhouse	June 28	6	Cromwell	3,100	68
Fitts, West	Pontotoc	34- 2-7e	E. H. Moore, Inc.	July 28	2	Gilcrease	1,875	100
Frederick	Tillman	1-3-9w	I. T. I. O. Co.	Aug. 27	2	Canyon lime	4,400	500
Frederick-Hatler area	Tillman	32-2-17w	I. T. I. O. Co.	Jan. 24	1	Canyon lime	4,529	130
Jesse, Hunton	Pontotoc	2- 1-7e	Continental Oil Co.	June 17	16	Hunton	4,160	3,528
Lamont	Grant	16-25-3w	Carter Oil Co.	Sept. 24	1	Wilcox	5,410	242
Langston	Logan	13-17-1w	Eason Oil Co.	May 1	7	Wilcox	5,128	2,784
Lucien, North	Noble	31-21-2w	W. H. Moelling	Dec. 15, 1936	4	Bromide	5,389	4,848
Oklahoma City, Pawhuska	Oklahoma	24-11-3w	I. T. I. O. Co.	July 24	5	Pawhuska	3,000	500
Oklahoma City, Tonkawa	Oklahoma	12-11-3w	I. T. I. O. Co.	May 8	10	Tonkawa	4,450	2,500
Oklahoma City, Upper Simpson	Oklahoma	15-12-3w	Anderson-Prichard Oil Corp.	July 1, 1936	17	Upper Sim. Dol.	6,450	72
Shawnee, East	Pottawatomie	31-1-5e	Mid-Continent Oil Co.	May 8	1	Wilcox	4,843	250
Shawnee, North	Pottawatomie	24-11-4e	Mid-Continent Oil Co.	Aug. 13	1	Wilcox	4,886	210
Sporn	Lincoln	21-17-3e	Skelly Oil Co.	Jan.	..	Wilcox	4,600	720
Tecumseh	Pottawatomie	32- 9-3e	Stanolind Oil & Gas Co.	June 30	1	Dolomite	5,238	5,612
Traugh	Seminole	22- 6-6e	R. P. Traugh	Dec. 15, 1936	18	Sand	2,360	1,200
Traugh, deep	Seminole	15- 6-6e	W. B. Pine	Aug. 25	2	Sand	3,779	10,000
Weleetka, South	Okfuskee	28-10-11e	A. S. Berry	Mar. 19	2	Sec. Gilcrease	2,700	84
Wellston, North	Lincoln	35-15-2e	Stanolind Oil & Gas Co.	Jan. 13	26	Wilcox	5,140	23,459
Wilzetta, South	Lincoln	10-12-5e	Amerada Petroleum Corp.	June 27, 1936	4	Hunton	4,400	292

OKLAHOMA

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
WASHINGTON COUNTY:													
Daily average	2,953	3,593	3,660	3,660	3,518	3,563	3,641	3,545	3,729	3,590	3,615	3,570	
Month	91,543	100,604	113,460	109,800	109,058	106,890	112,871	109,895	111,870	111,290	108,450	110,670	1,296,401
NOWATA COUNTY:													
Daily average	7,641	8,929	9,042	9,202	9,019	9,169	9,166	9,584	10,418	10,469	10,419	10,376	
Month	236,871	250,012	280,302	276,060	279,589	275,070	284,146	297,104	312,540	324,539	312,570	321,656	3,450,459
ROGERS COUNTY:													
Daily average	1,261	1,740	1,755	1,902	1,794	1,786	1,890	1,787	1,814	1,729	1,727	1,731	
Month	39,091	48,720	54,405	57,060	55,614	53,580	58,590	55,397	54,420	53,599	51,810	53,661	635,947
OSAGE AND EASTERN KAY COUNTIES:													
Burbank—													
Daily average	7,257	7,710	7,851	8,011	7,789	7,806	8,023	8,002	8,113	7,977	7,941	7,903	
Month	224,967	215,880	243,381	240,330	241,459	234,180	248,713	248,062	243,390	247,287	238,230	244,933	2,870,872
South Burbank—													
Daily average	16,054	16,027	16,320	15,968	15,567	15,517	15,944	16,020	14,366	13,962	13,894	13,818	
Month	497,674	448,756	505,920	479,040	482,577	465,510	494,264	496,620	430,980	432,822	416,820	428,358	5,579,341
Naval Reserve—													
Daily average	6,509	6,357	6,342	6,191	6,223	6,197	6,113	6,017	5,208	5,019	5,062	5,027	
Month	201,779	177,996	196,602	185,730	192,913	185,910	189,503	186,527	156,240	155,589	151,860	155,837	2,136,486
Other Osage fields—													
Daily average	14,114	15,853	15,850	15,472	15,303	15,316	16,027	14,649	14,875	14,400	14,471	14,216	
Month	437,534	443,884	491,350	464,160	474,393	459,480	496,837	454,119	446,250	446,400	434,130	440,696	5,489,233
TULSA COUNTY:													
Daily average	3,202	4,171	4,641	4,558	5,356	5,098	5,248	4,910	5,009	4,776	4,812	4,760	
Month	99,262	116,788	143,871	136,740	166,036	152,940	162,688	152,210	150,270	148,056	144,360	147,560	1,720,781
WAGONER COUNTY:													
Daily average	684	784	810	826	768	782	801	750	763	800	792	796	
Month	21,204	21,952	25,110	24,780	23,808	23,460	24,831	23,250	22,890	24,800	23,760	24,676	284,521
OKMULGEE COUNTY:													
Daily average	3,808	4,510	4,484	4,350	4,405	4,409	4,658	5,469	5,319	5,402	5,374	5,380	
Month	118,048	126,280	139,007	130,500	136,555	132,270	144,398	169,539	159,570	167,462	161,220	166,780	1,751,626
MUSKOGEE AND McINTOSH COUNTIES:													
Daily average	828	937	1,104	1,024	903	1,007	968	917	911	856	873	891	
Month	25,668	26,236	34,224	30,720	27,993	30,210	30,008	28,427	27,330	26,536	26,190	27,621	341,163
OKFUSKEE COUNTY (Miscellaneous)—													
Daily average	2,439	2,690	2,690	2,699	2,696	2,638	2,602	2,591	2,582	2,458	2,507	2,444	
Month	75,609	75,320	83,390	80,970	83,576	79,140	80,662	80,321	77,460	76,198	75,210	75,764	943,620

(Continued on Next Page)

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The Original and Only

"HANDLE-BAR" UNION

It is only natural that universal oil country acceptance should be accorded Youngstown's Forged Steel Unions. Manufactured since 1912 by the originators of steel unions, they represent the best in precision manufacture. Youngstown's Unions fill a thousand needs in the production and refining divisions of the oil industry.

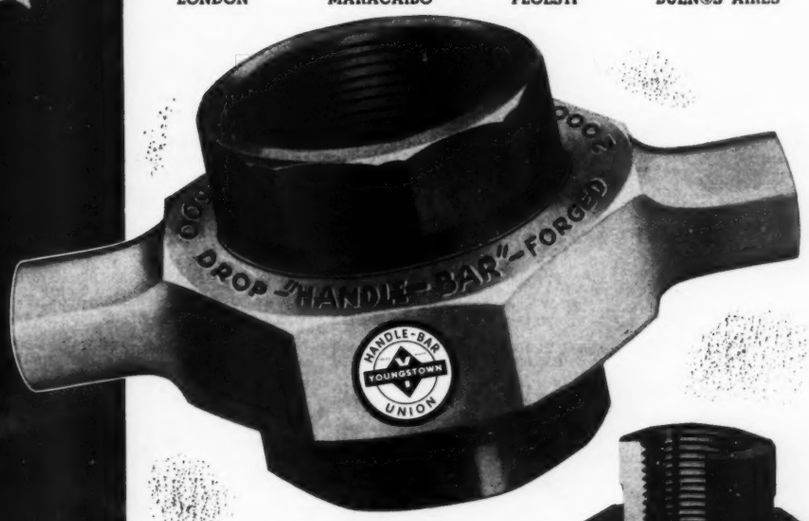
Nut and threads are permanently lubricated, rustproof and spark-proofed with Udylited Cadmium. Seats are machined and rolled cold under pressures from 1,000 to 10,000 pounds, producing a plate glass smoothness and hardness on the seat surfaces.

Made in sizes in 3/8" to 4" and with steel-to-steel, brass-to-brass and tongue-in-groove seats, there is a Handle-Bar Union to fill every union need.

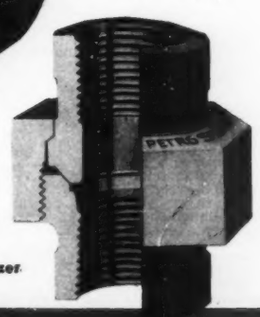
THE CONTINENTAL SUPPLY COMPANY
General Offices: DALLAS, TEXAS

Export Office: CONTINENTAL EMSCO CO., Inc.
30 Rockefeller Plaza New York City, N. Y.

Representatives:
LONDON MARACAIBO PLOESTI BUENOS AIRES



HANDLE-BAR
Use a hammer instead of a wrench to tighten or loosen the nut.



PETRO
Steel-to-steel seats, sizes 1/8" to 3"

"SERVING THE OIL AND GAS INDUSTRIES"

CONTINENTAL

OKLAHOMA (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
POTTAWATOMIE, SEMINOLE, HUGHES AND PONTOTOC COUNTIES:													
Seminole City—													
Daily average	9,586	9,780	9,712	9,277	9,434	9,492	9,346	9,361	9,418	9,243	9,181	8,905	
Month	297,166	273,840	301,072	278,310	292,454	284,760	289,720	290,191	282,540	286,533	275,430	276,055	3,428,077
East Seminole—													
Daily average	2,934	2,841	2,856	2,590	2,534	3,045	2,396	2,248	2,073	1,860	1,872	1,914	
Month	90,954	79,548	88,536	77,700	78,554	91,350	74,276	69,688	62,190	57,660	56,160	59,334	885,950
Bowlegs—													
Daily average	11,233	11,371	11,826	11,683	11,623	11,649	11,607	11,903	11,371	11,314	11,018	10,757	
Month	348,223	318,388	366,606	350,490	360,313	349,470	359,817	368,993	341,130	350,734	330,540	333,467	4,178,171
Earlsboro, North and South Earlsboro—													
Daily average	7,208	7,874	8,775	8,573	8,603	8,581	7,438	8,601	6,806	8,483	9,118	6,759	
Month	223,448	220,472	272,025	257,190	266,693	257,430	230,578	266,631	204,180	262,973	273,540	209,529	2,944,689
East Earlsboro and West Seminole—													
Daily average	7,794	7,126	7,388	7,462	7,469	7,456	7,172	7,576	7,426	6,953	6,649	6,680	
Month	241,614	199,528	229,028	223,860	231,539	223,680	222,332	234,856	222,780	215,543	199,470	207,080	2,651,310
Little River and East Little River—													
Daily average	12,310	12,294	12,175	12,050	11,865	12,839	11,519	11,179	10,808	10,620	10,559	10,653	
Month	381,610	344,232	377,425	361,500	367,815	385,170	357,089	346,549	324,240	329,220	316,770	330,243	4,221,863
Searight and North Searight—													
Daily average	4,638	4,876	4,890	4,821	4,779	4,635	4,443	4,288	4,239	4,049	4,004	3,906	
Month	143,778	136,528	151,590	144,630	148,149	139,050	137,733	132,928	127,170	125,519	120,120	121,086	1,628,281
Mission—													
Daily average	2,213	2,394	2,141	2,290	2,236	2,206	2,222	2,057	2,191	1,922	1,905	1,832	
Month	68,603	67,032	66,371	68,700	69,316	66,180	68,882	63,767	65,730	59,582	57,150	56,792	778,105
Carr City—													
Daily average	5,900	5,752	5,744	5,670	5,623	5,713	5,428	5,302	5,118	4,981	4,916	4,750	
Month	182,900	161,056	178,064	170,100	174,313	171,390	168,268	164,362	153,540	154,411	147,480	147,250	1,973,134
Maud—													
Daily average	795	852	811	832	807	759	763	814	783	690	713	656	
Month	24,645	23,856	25,141	24,960	25,017	22,770	23,653	25,234	23,490	21,390	21,390	20,336	281,882
Total Seminole field:													
Daily average	64,611	65,160	66,318	65,248	64,973	66,375	62,334	63,329	60,233	60,115	59,935	56,812	
Month	2,002,941	1,824,480	2,055,858	1,957,440	2,014,163	1,991,250	1,932,354	1,963,199	1,806,990	1,863,565	1,798,050	1,761,172	22,971,462
Alabama—													
Daily average	176	174	170	163	166	167	171	157	160	157	154	152	
Month	5,456	4,872	5,270	4,890	5,146	5,010	5,301	4,867	4,800	4,867	4,620	4,712	59,811
Asher and West Asher:													
Daily average	709	675	651	632	649	634	703	616	669	631	640	649	
Month	21,979	18,900	20,181	18,960	20,119	19,020	21,793	19,096	20,070	19,561	19,200	20,119	238,998
Allen district—													
Daily average	7,513	7,614	7,273	7,181	6,710	6,903	6,488	6,810	6,806	6,411	6,475	6,450	
Month	232,903	213,192	225,463	215,430	208,010	207,090	201,128	211,110	204,180	198,741	194,250	199,950	2,511,447
Beebe—													
Daily average	2,392	2,436	2,448	2,646	2,610	2,618	2,716	2,723	2,529	2,438	2,452	2,506	
Month	74,152	68,208	75,888	79,380	80,910	78,540	84,196	84,413	75,870	75,578	73,560	77,686	928,381
Bethel-North Bethel—													
Daily average	103	1,676	2,427	3,109	3,552	3,580	3,281	3,162	3,094	2,753	2,429	2,432	
Month	3,193	46,928	75,237	93,270	110,112	107,400	101,711	98,022	92,820	85,343	72,870	75,392	962,298
Conservation—													
Daily average	133	116	122	154	122	127	114	123	118	123	121	122	
Month	4,123	3,248	3,782	4,620	3,782	3,810	3,534	3,813	3,540	3,813	3,630	3,782	45,477
Cromwell—													
Daily average	3,141	3,431	3,617	3,544	3,438	3,422	3,562	3,537	3,633	3,340	3,514	3,415	
Month	97,371	96,068	112,127	106,320	106,578	102,660	110,422	109,647	108,990	103,540	105,420	105,865	1,265,008
Dill—													
Daily average	1,845	1,811	1,868	1,827	1,799	1,766	1,818	1,748	1,799	1,626	1,569	1,571	
Month	57,195	50,708	57,908	54,810	55,769	52,980	56,358	54,188	53,970	50,406	47,070	48,701	640,063
Fish—													
Daily average	6,742	6,150	6,075	5,566	5,496	6,021	6,154	5,954	5,447	5,024	4,831	4,842	
Month	209,002	172,200	188,325	166,980	170,376	180,630	190,774	184,574	163,410	155,744	144,930	150,102	2,077,047
Fitts—													
Daily average	76,249	82,894	87,831	92,502	90,815	92,289	94,121	90,880	77,740	76,688	77,991	78,263	
Month	2,363,719	2,321,032	2,722,761	2,775,060	2,815,265	2,768,670	2,917,751	2,817,280	2,332,200	2,377,328	2,339,730	2,426,153	30,976,949
Gray—													
Daily average	1,282	1,309	1,375	1,334	1,220	1,275	1,236	1,228	1,157	1,290	1,247	1,236	
Month	39,742	36,652	42,625	40,020	37,820	38,250	38,316	38,068	34,710	39,990	37,410	38,316	461,919
Grisso—													
Daily average	135	128	129	137	113	116	122	107	114	109	111	105	
Month	4,185	3,584	3,999	4,110	3,503	3,480	3,782	3,317	3,420	3,379	3,330	3,255	43,344
Holdenville—													
Daily average	971	1,134	1,042	1,151	1,082	1,066	1,084	999	1,012	956	1,002	949	
Month	30,101	31,752	32,302	34,530	33,542	31,980	33,604	30,969	30,360	29,636	30,060	29,419	378,255
Jesse—													
Daily average	2,722	2,687	2,851	3,637	2,690	2,748	3,364	3,534	3,303	3,264	3,573	3,510	
Month	84,382	75,236	88,381	109,110	83,390	82,440	104,284	109,554	99,090	101,184	107,190	108,810	1,153,051
Keokuk-South Keokuk—													
Daily average	7,076	7,989	8,241	8,461	9,040	8,811	8,745	8,637	8,641	7,438	7,369	7,483	
Month	219,356	223,692	255,471	253,830	280,240	264,330	271,095	267,747	259,230	230,578	221,070	231,973	2,978,612
Dora—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,091	2,297	2,288	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	64,821	68,910	70,928	204,659
Konawa-East Konawa—													
Daily average	1,571	1,513	1,671	1,678	1,683	1,756	1,662	1,691	1,602	1,527	1,562	1,549	
Month	48,701	42,364	51,801	50,340	52,173	52,680	51,522	52,421	48,060	47,337	46,860	48,019	592,278
Olympic—													
Daily average	12,190	13,994	14,584	13,988	13,289	13,279	12,137	10,848	10,080	9,159	9,313	9,207	
Month	377,890	391,832	452,104	419,640	411,959	398,370	376,247	336,288	302,400	283,929	279,390	285,417	4,315,466
Shawnee—													
Daily average	649	728	852	1,114	1,355	1,316	1,596	1,772	1,650	1,558	1,601	1,552	
Month	20,119	20,384	26,412	33,420	42,005	39,480	49,476	54,932	49,500	48,298	48,030	48,112	480,168
St. Louis-Pearson—													
Daily average	21,151	21,397	21,436	22,721	22,137	21,675	20,382	19,039	19,274	19,818	19,605	18,947	
Month	655,681	599,116	664,516	681,630	686,247	650,250	631,842	590,209	578,220	614,358	588,150	587,357	7,527,576
Sasakwa—													
Daily average	2,136	2,075	2,216	2,153	2,071	1,756	2,003	1,880	1,846	1,847	1,852	1,846	
Month	66,216	58,100	68,696	64,590	64,201	52,680	62,093	58,280	55,380	57,257	55,560	57,226	720,279
Sasakwa townsite—													
Daily average	719	639	861	758	742	644	640	638	643	637	636	632	
Month	22,289	17,892	26,691	22,740	23,002	19,320	19,840	19,778	19,290	19,747	19,080	15,592	249,261
Papoose-Gilcrease-Fuhrman—													
Daily average	940	927	931	924	821	818	813	843	836	833	831	828	
Month	29,140	25,956	28,861	27,720	25,451	24,540	25,203	26,133	25,080	25,823	24,930	25,668	314,505
Wofford—													
Daily average	583	428	418	405	388	377	427	405	422	406	410	401	
Month	18,073	11,984	12,958	12,150	12,028	11,310	13,237	12,555	12,660	12,586	12,300	12,431	154,272
Wetley—													
Daily average	167	163	283	360	407	393	312	447	433	440	436	439	
Month	5,177	4,564	8,773	10,800	12,617	11,790	9,672	13,857	12,990	13,640	13,080	13,609	130,569
Wewoka district—													
Daily average	3,239	3,492	3,313	3,267	3,291	3,244	2,891	3,011	2,982	2,708	2,741	2,709	
Month	100,409	97,776	102,703	98,010	102,021	97,320	89,621	93,341	89,460	83,948	82,230	83,979	1,120,818
Miscellaneous—													
Daily average	818	887	891	737	818	792	518	610	612	467	502	488	
Month	25,358	24,836	27,621	22,110	25,358	23,760	16,058	18,910	18,360	14,477	15,060	15,128	247,036
Grayson—													
Daily average	491	480	469	478	472	479	584	493	558	506	542	561	
Month	15,221	13,440	14,539	14,340	14,632	14,370	18,104	15,283	16,740	15,686	16,260	17,391	186,006
Adams—													
Daily average	311	314	313	327	351	348	441	497	678	725	707	694	
Month	9,641	8,792	9,703	9,810	10,881	10,440	13,671	15,407	20,340	22,475	21,210	21,514	173,884
Traugh—													
Daily average	.....	.....	.....	.....	.....	.....	1,501	1,404	1,846	1,256	1,351	1,309	
Month	.....	.....	.....	.....	.....	.....	46,531	43,524	55,380	38,936	40,530	40,579	265,480
Muse—													
Daily average	.....	.....	.....	.....	.....	.....	.....	360	366	445	410	396	
Month	.....	.....	.....	.....	.....	.....	.....	11,160	10,980	13,795	12,300	12,276	60,511
CREEK COUNTY—													
Glen Pool, Sapulpa, Bowden—													
Daily average	3,964	4,358	4,429	4,453	4,466	4,447	4,376	4,170	4,202	4,217	4,212	4,193	
Month	122,884	122,024	137,299	133,590	138,446	133,410	135,656	129,270	126,060	130,727	126,360	129,983	1,565,709

(Continued on Next Page)

duction in new pools and extension areas, and through secondary recovery methods in stripper districts. Daily yield in the first week of the year was 560,125 bbls. and that of the last week in December was 533,675 bbls.

Although no pool that gives promise of being another Fitts was opened, several areas of considerable importance were discovered.

The wildcatters went back into Seminole County to open new pools in the midst of many older producing sectors. Foremost among these was the Traugh pool opened in February at Paul Traugh No. 1 Williams, NE SE NE section 22-6-6, east of the Konawa pool. It was a 62 bbl. producer at 2,361 feet, total depth. In October, W. B. Pine opened a Wilcox sand producing area at No. 1 Amoson, SE SE SW section 15-6-6, north of the Traugh discovery. It had second Wilcox sand at 3,763 feet, total depth and flowed as high as 1,967 bbls. of oil in 24 hours at 3,782 feet, total depth. The two sectors were combined and named the Traugh pool by the nomenclature committee of the Mid-Continent Oil & Gas Association. Other important Seminole pools opened during the

OKLAHOMA (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
Cushing and Shamrock—													
Daily average	9,773	10,438	10,535	10,651	10,704	10,612	10,877	11,077	10,994	11,011	10,963	10,847	
Month	302,963	292,264	326,585	319,530	331,824	318,360	337,187	343,387	329,820	341,341	328,890	336,257	3,908,408
Manford and Olive—													
Daily average	2,030	2,065	2,096	1,874	1,907	1,919	1,786	1,864	1,917	1,891	1,888	1,879	
Month	62,930	57,820	64,976	56,220	59,117	57,570	55,366	57,784	57,510	58,621	56,640	58,249	702,803
Bristow and Slick district—													
Daily average	7,138	7,709	7,639	7,719	7,707	7,827	8,247	7,171	7,712	7,760	7,707	7,417	
Month	221,278	215,852	236,809	231,570	238,917	234,810	255,657	222,301	231,360	240,560	231,210	229,927	2,790,251
Mounds, Independent and Miscellaneous—													
Daily average	802	1,788	1,701	1,715	1,707	1,713	1,694	1,519	1,513	1,498	1,491	1,479	
Month	24,862	50,064	52,731	51,450	52,917	51,390	52,514	47,089	45,390	46,438	44,730	45,849	565,424
PAWNEE AND PAYNE COUNTIES—													
Yale district, Maramec and Jennings—													
Daily average	3,926	3,931	4,169	4,234	4,229	4,218	4,137	4,163	4,157	4,166	4,153	4,127	
Month	121,706	110,068	129,239	127,020	131,099	126,540	128,247	129,053	124,710	129,146	124,590	127,937	1,509,355
Masham-Ralston—													
Daily average	60	59	58	56	55	57	52	52	54	45	51	46	
Month	1,860	1,652	1,798	1,680	1,705	1,710	1,612	1,612	1,620	1,395	1,530	1,426	19,600
Ripley-Mehan—													
Daily average	310	308	179	307	297	302	291	200	128	210	202	198	
Month	9,610	8,624	5,549	9,210	9,207	9,060	9,021	6,200	3,840	6,510	6,060	6,138	89,029
Watchorn—													
Daily average	361	369	373	356	325	333	324	320	351	329	336	327	
Month	11,191	10,332	11,563	10,680	10,075	9,990	10,044	9,920	10,530	10,199	10,080	10,137	124,741
Cleveland and Keystone—													
Daily average	704	705	688	672	824	811	849	856	934	997	982	979	
Month	21,824	19,740	21,328	20,160	25,544	24,330	26,319	26,536	28,020	30,907	29,460	30,349	304,517
Stillwater—													
Daily average	453	452	465	418	364	360	236	161	142	135	140	136	
Month	14,043	12,656	14,415	12,540	11,284	10,800	7,316	4,991	4,260	4,185	4,200	4,216	104,906
Lauderdale—													
Daily average	949	958	984	948	945	952	991	1,003	976	996	1,008	994	
Month	29,419	26,824	30,504	28,440	29,295	28,560	30,721	31,093	29,280	30,876	30,240	30,814	356,066
Miscellaneous—													
Daily average	216	211	217	262	258	266	433	426	439	429	433	427	
Month	6,696	5,908	6,727	7,860	7,998	7,980	13,423	13,206	13,170	13,299	12,990	13,237	122,494
OKLAHOMA CITY:													
Oklahoma City—													
Daily average	150,594	147,347	148,510	172,392	164,774	152,706	156,821	159,239	148,333	143,049	127,104	129,737	
Month	4,668,414	4,125,716	4,603,810	5,171,760	5,107,994	4,581,180	4,861,451	4,936,409	4,449,990	4,434,519	3,813,120	4,021,847	54,776,210
Edmond—													
Daily average	17,198	17,123	24,340	20,515	17,045	21,711	16,628	15,415	12,439	10,749	9,651	10,738	
Month	533,138	479,444	754,540	615,450	528,395	651,330	515,468	477,865	373,170	333,219	289,530	332,878	5,884,427
Britton-North Britton—													
Daily average	2,427	2,236	2,755	2,250	2,666	2,308	1,957	1,578	1,487	1,407	1,193	1,196	
Month	75,237	62,608	85,405	67,500	82,646	69,240	60,667	48,918	44,610	43,617	35,790	37,076	713,314
LINCOLN COUNTY:													
Chandler and Hoyt—													
Daily average	3,562	3,525	3,254	3,232	3,142	3,125	3,066	2,907	2,924	2,712	2,791	2,711	
Month	110,422	98,700	100,874	96,960	97,402	93,750	95,046	90,117	87,720	84,072	83,730	84,041	1,122,834
Stroud-Skellyville—													
Daily average	476	487	441	454	485	479	472	469	472	458	457	457	
Month	14,756	13,636	13,671	13,620	15,035	14,370	14,632	14,539	14,160	14,198	13,710	14,167	170,494
Gessman—													
Daily average	110	127	106	103	109	106	107	108	103	91	94	92	
Month	3,410	3,556	3,286	3,090	3,379	3,180	3,317	3,348	3,090	2,821	2,820	2,852	38,149
Wilzetta—													
Daily average	553	556	544	301	416	411	429	431	278	514	491	486	
Month	17,143	15,568	16,864	9,030	12,896	12,330	13,299	13,361	8,340	15,934	14,730	15,066	164,561
Davenport-Kendrick and Miscellaneous—													
Daily average	886	898	1,261	993	748	882	869	873	877	1,022	990	962	
Month	27,466	25,144	39,091	29,790	23,188	26,460	26,939	27,063	26,310	31,682	29,700	29,822	342,655
Lafoon—													
Daily average	760	758	682	563	606	594	701	737	658	702	693	676	
Month	23,560	21,224	21,142	16,890	18,786	17,820	21,731	22,847	19,740	21,762	20,790	20,956	247,248
Sporn—													
Daily average	.....	.....	.....	528	759	742	744	740	724	839	720	762	
Month	.....	.....	.....	15,840	23,529	22,260	23,064	22,940	21,720	26,009	21,600	23,622	200,584
Wellston, North—													
Daily average	.....	.....	.....	383	746	708	1,651	1,737	1,643	1,552	1,404	1,411	
Month	.....	.....	.....	11,490	23,126	21,240	51,181	53,847	49,290	48,112	42,120	43,741	344,147
KAY, GRANT AND NOBLE COUNTIES:													
Blackwell, Deer Creek, Otstot, Caldwell, Lamont and Webb—													
Daily average	1,063	976	1,007	1,073	1,069	1,062	998	962	884	947	911	902	
Month	32,953	27,328	31,217	32,190	33,139	31,860	30,938	29,822	26,520	29,357	27,330	27,962	360,616
Dilworth—													
Daily average	508	534	538	538	542	531	532	492	509	489	487	486	
Month	15,748	14,952	16,678	16,140	16,802	15,930	16,492	15,252	15,270	15,159	14,610	15,066	188,099
Ponca City—													
Daily average	227	270	231	276	266	269	249	246	252	232	243	239	
Month	7,037	7,560	7,161	8,280	8,246	8,070	7,719	7,626	7,560	7,192	7,290	7,409	91,150
Braman-North Braman—													
Daily average	2,071	2,232	2,330	2,235	2,249	2,262	2,597	2,406	2,273	2,345	2,351	2,310	
Month	64,201	62,496	72,230	67,050	69,719	67,860	80,507	74,586	68,190	72,695	70,530	71,610	841,674
Hubbard—													
Daily average	600	674	652	711	689	694	686	606	576	591	591	587	
Month	18,600	18,872	20,212	21,330	21,359	20,820	21,266	18,786	17,280	18,321	17,730	18,197	232,773
Thomas—													
Daily average	251	249	258	276	271	270	264	257	253	262	259	258	
Month	7,781	6,972	7,998	8,280	8,401	8,100	8,184	7,967	7,590	8,122	7,770	7,998	95,163
Tonkawa—													
Daily average	2,467	2,502	2,576	2,402	2,411	2,393	2,334	2,337	2,339	2,264	2,271	2,256	
Month	76,477	70,056	79,856	72,060	74,741	71,790	72,354	72,447	70,170	70,184	68,130	69,936	868,201
Billings—													
Daily average	1,898	3,524	4,348	6,725	6,885	6,996	7,389	8,357	7,849	7,707	7,742	7,625	
Month	58,838	98,672	134,788	201,750	213,435	209,880	229,059	259,067	235,470	238,917	232,260	236,375	2,348,511
Lucien—													
Daily average	13,342	13,048	14,130	15,317	15,319	15,594	13,605	13,733	13,065	12,966	13,004	12,769	
Month	413,602	365,344	438,030	459,510	474,889	467,820	421,755	425,723	391,950	401,946	390,120	395,839	5,046,528
Vernon—													
Daily average	377	373	434	392	392	407	384	365	361	329	330	336	
Month	11,687	10,444	13,454	11,760	12,152	12,210	11,904	11,315	10,830	10,199	9,900	10,416	136,271
Polo—													
Daily average	1,886	1,759	1,618	1,430	1,362	1,289	907	931	851	751	743	709	
Month	58,466	49,252	50,158	42,900	42,222	38,670	28,117	28,861	25,530	23,281	22,290	21,979	431,726
Miscellaneous—													
Daily average	160	152	166	262	261	214	177	201	212	202	211	207	
Month	4,960	4,256	5,146	7,860	8,091	6,420	5,487	6,231	6,360	6,262	6,330	6,417	73,820
Perry district—													
Daily average	239	243	251	353	349	341	205	193	191	197	194	195	
Month	7,409	6,804	7,781	10,590	10,819	10,230	6,355	5,983	5,730	6,107	5,820	6,045	89,673
North Lucien—													
Daily average	232	100	101	561	559	558	382	359	398	485	477	463	
Month	7,192	2,800	3,131	16,830	17,329	16,740	11,842	11,129	11,940	15,035	14,310	14,353	142,631
Lamont—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	480	733	591	602	
Month	.....	.....	.....	.....	.....	.....	.....	.....	14,400	22,723	17,730	18,662	73,515

(Continued on Next Page)

year were the Dora pool in section 32-7-6, and South Cromwell pool in section 28-10-8.

The Fitts District

The Fitts district of southern Pontotoc County was the most active area in the state throughout the year. Drilling in the Fitts field proper continued at a rapid pace in the early months of the year and several extensions were registered, but the work had slowed down as the year ended with a comparatively few rigs busy. Although the field has been defined, some locations remain to be drilled and there will be considerable work in the future as operators plug back or deepen old wells to test out various zones of the pool's many pay horizons. Development of Cromwell sand production was a feature of the past year at Fitts.

Included in the Fitts district are the South Fitts pool in section 33-2n-7e and West Fitts pool, in section 20-2n-6, both discoveries of 1936.

The Jesse pool, southeast of Fitts, was extended several times during the year and production was developed across the line in Coal County. The Jesse producing limits also were pushed northward toward Fitts, with a considerable area in that direction opened to development.

In Coal County

In addition to the work in the Jesse sector, considerable wildcat drilling was carried on in Coal County, with the Centrahoma structure yielding one small pool opener at Carter Oil Co. and others No. 1 Thompson, C S½ NE NW section 24-2n-9. Another Centrahoma wildcat was showing as a small producer as the year ended at Carter Oil Co. and others No. 1 Claytor, C W½ NE SW section 27-2n-9, but it had not been completed.

The search for deep pay horizons in southern Oklahoma, principally in Carter and Stephens counties, held attention throughout the year. The deep discovery well in the Fox field, Carter County, completed in 1936, continued to produce its 500 bbls. daily throughout 1937. Two additional deep producers at Fox were near completion for good producers as the year ended, at Gulf Oil Corp. No. 1 Smith, C SW SW section 26-2s-3w, a 1,079 bbl. well at 7,773 feet, total depth, and same company's No. 1 Johnson, C SW NW section 27-2s-3w, which was looking like a 3,000-bbl. well. These wells produce high gravity oil.

The first deep producer was completed in the Milroy pool, Stephens County, west of the Fox field, in September. It was Carter Oil Co. and others No. 1 Harley, C NE NE section 24-2s-4w, flowing 2,770 bbls. of 54 gravity oil from the oolitic lime at 7,554 feet, total depth 8,157 feet.

Rework Old Wells

There was consistent activity throughout the year in Pottawatomie, Lincoln, Hughes and Okfuskee counties, with several new producing areas being opened. The once-booming St. Louis district of Pottawatomie County saw considerable activity as operators reconditioned old wells, plugging back or deepening to new horizons for increased production.

Rapid development of the Olympic field of Hughes and Okfuskee counties was one of the features of the year. This pool, opened in 1935 in Hughes County, was extended into Okfuskee County in 1936 and the produc-

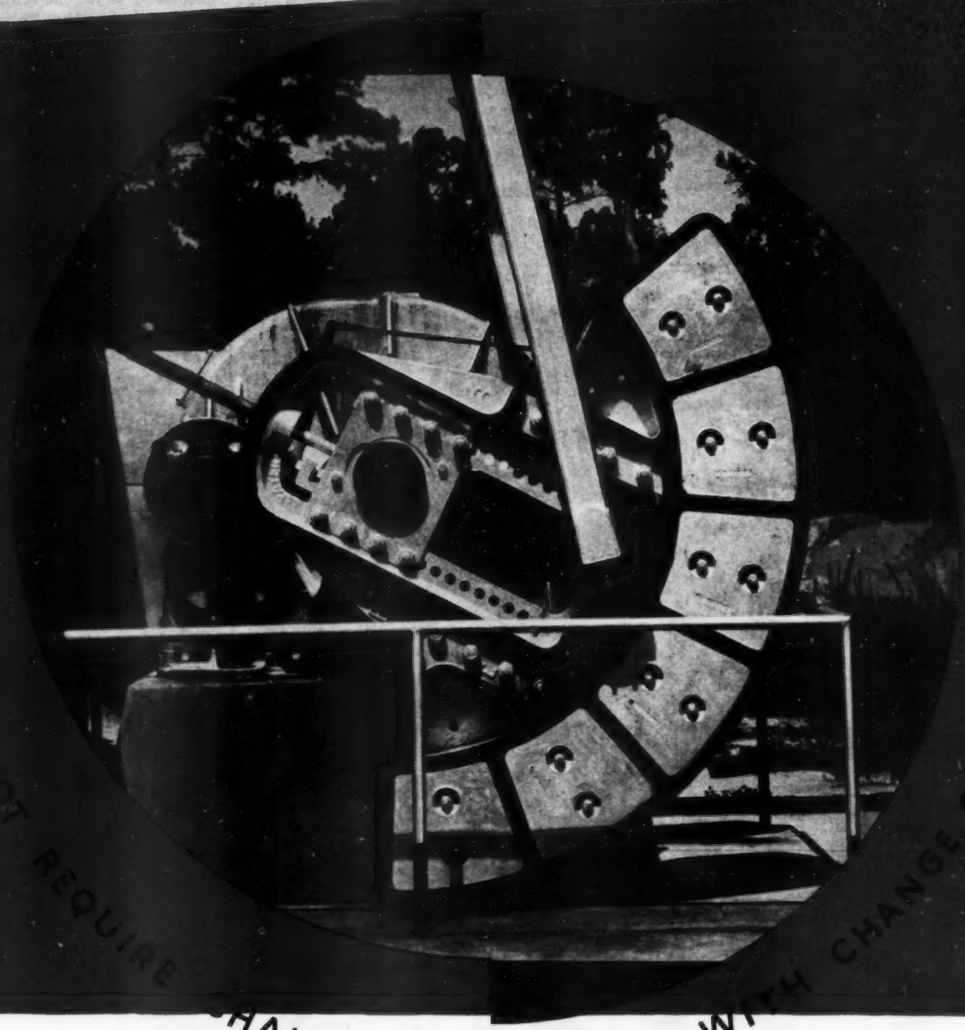
OKLAHOMA (Continued)

Daily Average and Monthly Production in 1937

	(bbls.) January	(bbls.) February	(bbls.) March	(bbls.) April	(bbls.) May	(bbls.) June	(bbls.) July	(bbls.) August	(bbls.) September	(bbls.) October	(bbls.) November	(bbls.) December	(bbls.) Ttl. 1937
GARFIELD COUNTY:													
Garber—													
Daily average	1,871	2,258	2,210	2,118	2,109	2,094	2,179	2,047	2,076	2,005	2,040	2,016	
Month	58,001	63,224	68,510	63,540	65,379	62,820	67,549	63,457	62,280	62,155	61,200	62,496	760,611
Miscellaneous—													
Daily average	177	157	169	149	146	142	52	62	61	59	57	59	
Month	5,487	4,396	5,239	4,470	4,526	4,260	1,612	1,922	1,830	1,829	1,710	1,829	39,110
LOGAN COUNTY:													
Crescent—													
Daily average	10,730	11,350	15,104	14,926	12,272	10,316	8,922	9,482	7,995	7,699	8,974	8,938	
Month	332,630	317,800	468,224	447,780	380,432	309,480	276,582	293,942	239,850	238,669	269,220	277,078	3,851,687
Langston—													
Daily average	154	154	1,621	1,110	1,106	1,102	659	909	943	846	851	844	
Month	4,774	4,312	50,251	33,300	34,286	33,060	20,429	28,179	28,290	26,226	25,530	26,164	314,801
Marshall-Lovell-Seward—													
Daily average	799	772	776	782	779	779	603	637	448	499	488	479	
Month	24,769	21,616	24,056	23,460	24,149	23,370	18,693	19,747	13,440	15,469	14,640	14,849	238,258
Miscellaneous—													
Daily average	48	51	59	38	40	40	105	47	51	43	47	48	
Month	1,488	1,428	1,829	1,140	1,240	1,200	3,255	1,457	1,530	1,333	1,410	1,488	18,798
CARTER COUNTY:													
Healdton—													
Daily average	9,561	9,774	9,779	9,904	10,219	10,211	10,228	10,226	10,187	10,041	10,018	9,962	
Month	296,391	273,672	303,149	297,120	316,789	306,330	317,068	317,006	305,610	311,271	300,540	308,822	3,653,768
Hewitt—													
Daily average	4,129	4,380	4,487	4,478	4,407	4,447	4,396	4,316	4,409	4,125	4,317	4,174	
Month	127,999	122,640	139,097	134,340	136,617	133,410	136,276	133,796	132,270	127,875	129,510	129,394	1,583,224
Sholem-Alechem—													
Daily average	2,983	3,284	3,136	3,266	3,229	3,226	3,220	3,116	3,043	3,194	3,188	3,176	
Month	92,473	91,952	97,216	97,980	100,099	96,780	99,820	96,596	91,290	99,014	95,640	98,456	1,157,316
Tatums-Tussey—													
Daily average	4,165	4,756	4,917	4,954	5,496	5,144	5,520	5,811	5,989	6,049	5,983	5,992	
Month	129,115	133,168	152,427	148,620	170,376	154,320	171,120	180,141	179,670	187,519	179,490	185,752	1,971,718
Graham, Fox and Wildcat Jim—													
Daily average	4,537	4,793	4,778	4,708	4,599	4,647	4,449	4,573	4,187	4,376	4,347	4,329	
Month	140,647	134,204	148,118	141,240	142,569	139,410	137,919	141,763	125,610	135,656	130,410	134,199	1,651,745
Brock and Miscellaneous—													
Daily average	504	511	513	490	518	488	477	494	507	474	482	490	
Month	15,624	14,308	15,903	14,700	16,058	14,640	14,787	15,314	15,210	14,694	14,460	15,190	180,888
STEPHENS AND COTTON COUNTIES:													
Duncan district—													
Daily average	1,843	1,944	2,007	2,013	2,061	2,047	2,030	2,059	2,062	1,967	1,974	1,962	
Month	57,133	54,432	62,217	60,390	63,891	61,410	62,930	63,829	61,860	60,977	59,220	60,822	729,111
Loco-Milroy—													
Daily average	653	677	697	747	758	760	718	780	796	1,744	1,339	1,411	
Month	20,243	18,956	21,607	22,410	23,498	22,800	22,258	24,180	23,880	54,064	40,170	43,741	337,807
Velma—													
Daily average	693	876	823	851	863	859	834	873	834	745	812	802	
Month	21,483	24,528	25,513	25,530	26,753	25,770	25,854	27,063	25,020	23,095	24,360	24,862	299,831
Walters—													
Daily average	998	1,130	1,039	1,168	1,193	1,188	1,195	1,205	1,248	1,147	1,153	1,161	
Month	30,938	31,640	32,209	35,040	36,983	35,640	37,045	37,355	37,440	35,557	34,590	35,991	420,428
Comanche—													
Daily average	772	786	766	755	780	776	819	765	742	758	749	747	
Month	23,932	22,008	23,746	22,650	24,180	23,280	25,389	23,715	22,260	23,498	22,470	23,157	280,285
Miscellaneous—													
Daily average	210	261	262	259	262	271	263	279	272	398	342	337	
Month	6,510	7,308	8,122	7,770	8,122	8,130	8,153	8,649	8,160	12,338	10,260	10,447	103,969
JEFFERSON COUNTY:													
Daily average	1,936	2,130	2,245	2,352	2,318	2,332	2,896	3,161	3,543	3,461	3,587	3,529	
Month	60,016	59,640	69,595	70,560	71,858	69,960	89,776	97,991	106,290	107,291	107,610	109,399	1,019,986
GARVIN COUNTY:													
Robberson pool—													
Daily average	1,089	1,125	1,170	1,200	1,165	1,196	1,154	1,129	1,144	1,137	1,116	1,130	
Month	33,759	31,500	36,270	36,000	36,115	35,880	35,774	34,999	34,320	35,247	33,480	35,030	418,374
GRADY COUNTY:													
Daily average	1,322	1,395	1,503	1,490	1,456	1,461	1,473	1,443	1,565	1,451	1,488	1,477	
Month	40,982	39,060	46,593	44,700	45,136	43,830	45,663	44,733	46,950	44,981	44,640	45,787	533,055
MARSHALL COUNTY:													
Daily average	297	259	248	251	252	249	182	207	262	192	198	194	
Month	9,207	7,252	7,688	7,530	7,812	7,470	5,642	6,417	7,860	5,952	5,940	6,014	84,784
CADDO COUNTY:													
Daily average	1,831	2,008	1,838	1,836	1,817	1,823	1,763	1,794	2,357	2,694	2,978	2,967	
Month	56,761	56,224	56,978	55,080	56,327	54,690	54,653	55,614	70,710	83,514	89,340	91,977	781,868
TILLMAN COUNTY:													
Daily average	524	499	519	469	581	567	480	516	777	1,009	949	928	
Month	16,244	13,972	16,089	14,070	18,011	17,010	14,880	15,996	23,310	31,279	28,470	28,768	238,099
COMANCHE COUNTY:													
Daily average	16	23	12	19	19	18	17	17	4	25	26	23	
Month	496	644	372	570	589	540	527	527	120	775	780	713	6,653
JACKSON COUNTY:													
Daily average	1,213	1,074	1,058	986	980	977	871	933	1,007	1,225	1,167	1,170	
Month	37,603	30,072	32,798	29,580	30,380	29,310	27,001	28,923	30,210	37,975	35,010	36,270	385,132
CLEVELAND COUNTY:													
Moore—													
Daily average	4,730	7,989	13,716	14,733	12,298	14,444	11,329	10,611	9,691	10,120	8,810	9,511	
Month	146,630	223,692	425,196	441,990	381,238	433,320	351,199	328,941	290,730	313,720	264,300	294,841	3,895,797
COAL COUNTY:													
Daily average	61	76	62	52	50	73	96	56	46	89	110	96	
Month	1,891	2,128	1,922	1,560	1,550	2,190	2,976	1,736	1,380	2,759	3,300	2,976	26,408
Daily average	577,934	603,258	634,805	664,099	645,322	640,229	632,378	627,932	593,586	583,075	566,835	565,428	611,251
Total 1937	17,915,954	16,891,224	19,678,955	19,922,970	20,004,982	19,206,870	19,603,718	19,465,892	17,807,580	18,075,325	17,005,050	17,528,268	228,106,788
Total 1936	15,236,345	14,774,717	16,459,543	16,730,460	17,371,532	16,799,250	16,854,359	17,728,993	16,759,620	17,459,913	16,743,240	17,962,733	200,880,705
Total 1935	14,978,642	13,717,900	15,456,786	15,400,050	16,071,051	15,728,730	16,048,080	14,940,636	14,418,870	15,529,915	15,224,280	15,081,934	182,596,874
Total 1934	15,053,166	13,345,276	15,166,471	15,378,390	16,068,199	16,135,650	15,661,200	15,069,348	13,980,030	14,155,592	14,020,950	14,617,740	178,652,012
Total 1933	12,575,832	12,592,132	15,479,726	11,746,170	13,552,797	14,360,910	18,406,374	18,802,382	16,603,890	15,031,032	14,364,030	14,835,174	178,356,449

CORRECT COUNTERBALANCING

(NO. ONE OF A SERIES)



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ing limits were extended northward several times the past year. Production was from Senora sand at 1,750 to 1,950 feet. Development had passed its peak at mid-year, however, and the field was practically drilled up at the end of 1937.

Some new producing areas were opened in Lincoln County, and several large producers were completed in the North Wellston pool in the western part of the county. As the year ended, the old Sac & Fox field, quiescent for some years, was experiencing a revival. with wells averaging better than 100 bbls. being completed in the 3,000-foot Prue sand zone.

The Doyle Area

Another Stephens County test found deep production in the shallow Doyle area, at Helmerich & Payne and others No. 1-A Graham, SW SW NE section 12-1n-5w. It produced as high as 410 bbls. of oil daily, with 10,000,000 feet of gas, after plugging back from 5,014 feet, total depth, to 3,850 feet and perforating casing. Several additional wells were drilled at Doyle as a result of this strike.

Two deep wildcats were completed as small producers to open Love County areas, but no subsequent tests were started.

Tillman County entered the producing class during the year, with discoveries in sections 32-2s-17w and 1-3s-19w, these areas being designated as the Frederick district by the nomenclature committee.

A southern Oklahoma sector that claimed little attention but which was consistently active throughout the 12 months was the Spring-Oscar-Seay district of southern Jefferson County. Numerous wells ranging in production from 10 to 200 bbls. daily were completed in this field, at around 1,100 feet.

Lucien and Billings

Logan and Noble counties provided some of the largest producers of the year, mainly in the Lucien and Billings pools. Most of the work at Lucien was in the Logan County extension, but the area was practically defined at the year-end. The Billings pool in western Noble County was of comparatively small area, but it was highly productive and several 3,000 to 5,000-bbl. wells were completed in Wilcox sand. Some excitement was caused early in April when gusher production was uncovered in the old Langston pool, eastern Logan County, at Eason Oil Co. and others No. 1 Smith, SW NW NW section 13-17-1w, a 4,653-bbl. producer from Wilcox sand at 5,112-28 feet, total depth. Subsequent wells drilled in the area were comparatively small producers, however, and the activity soon fell off.

Kay County activity was given a boost in October when Shaffer & Estes No. 1 Haunchild, NE NE SW section 8-28-1w, extended the old Braman pool southward and started a new play in that sector. It was completed in Wilcox sand at 3,513-23 feet, total depth, producing 342 bbls. of 42.5 gravity oil daily.

Another feature of the year's activity in the northern part of the state was the opening of the Lamont pool in southwestern Grant County. The discovery well, Carter Oil Co. and others No. 1 Crisman, C W½ SW NW section 16-25-3w, was a September completion in Wilcox sand at 5,400-10 feet, total depth, flowing 756 bbls. of oil in 24 hours on completion test.

RESULTS OF WILDCAT DRILLING

County—	Oil and gas wells	Dry holes	Avg. depth of dry holes
Atoka	0	4	787
Alfalfa	0	0	7,332
Beckham	0	5	2,293
Caddo	0	1	6,522
Carter	0	7	2,350
Choctaw	0	1	1,151
Cleveland	0	3	7,410
Coal	3 (1 gas)	6	5,156
Comanche	0	5	1,554
Cotton	0	5	2,215
Creek	1	2	3,914
Garfield	0	3	5,505
Garvin	0	4	4,884
Grady	0	1	3,507
Grant	1	1	5,852
Greer	0	2	3,347
Haskell	0	1	7,003
Harmon	0	2	4,469
Hughes	4 (3 gas)	9	4,196
Jackson	0	4	749
Jefferson	0	7	3,143
Kay	2 (1 gas)	5	3,138
Kiowa	3 (2 gas)	7	668
Latimer	0	1	6,515
LeFlore	0	1	3,505
Lincoln	5	6	4,312
Logan	0	8	5,970
Love	2	1	4,009
Marshall	1	7	2,264
McCurtain	0	1	1,380
Murray	0	3	3,140
Muskogee	0	2	1,259
Noble	1	7	4,998
Okfuskee	1	7	3,001
Oklahoma	0	3	6,306
Osage	0	4	2,846
Pawnee	0	5	3,342
Payne	0	4	4,501
Pittsburgh	0	3	5,980
Pontotoc	3 (1 gas)	9	3,376
Pottawatomie	3	6	4,181
Pushmataha	0	1	6,010
Seminole	6 (1 gas)	11	3,577
Stephens	3	6	3,859
Texas	5 (5 gas)	0	0
Tillman	3	5	3,759
Tulsa	2 (1 gas)	0	0
Washita	0	1	4,190
Total	49	187	

Average depth of oil and gas wells, feet	3,960
Average depth of dry holes, feet	3,625
Percentage of oil wells	14.4
Percentage of gas wells	6.4
Percentage of dry holes	79.2

Panhandle Gassers

Texas County, in the Oklahoma Panhandle, received some attention during the year as operators sought gas production. Five wells, classed as wildcats, were completed in this county and each uncovered gas production. The final Texas County completion of the year, Hagy, Harrington & Marsh No. 1 Becker, C NE section 4-1n-13ecm, produced 8,750,000 feet of gas after plugging back from 3,010 feet, total depth, to 2,900 feet. It is characteristic of the other Texas County discoveries, all in the gas trend between the Hugoton field of Kansas and the Amarillo gas area of the Texas Panhandle.

Oklahoma City offered nothing in 1937 to compare with the Capitol Extension boom of 1935-36, but even so, there was considerable activity in the state's biggest field. Indeed, the field experienced somewhat of a comeback in the late months of the year as operators sought new production at both the north and south ends of the pool. With the drilling up of the Wilcox sand area in the Capitol extension, operators forged further north beyond city limits to uncover production in Dolomite

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and other zones above the Wilcox. Shallow production in the Pawhuska zone between 2,800 and 2,900 feet was the goal of several wells in the south end of the older field, some producing at around 500 bbls. daily. Indications were that owners of many of the deep producers would get into this play for shallower production.

Cement Field Active

The Cement field of Caddo County was one of the more active fields of the state as 1937 ended, and indications were that it would see considerable development during the new year. Tests were being drilled on both the east and west sides of this old pool, opened in 1916 and given several extensions in 1937. Late in the year impetus to this new development was given by Ray Stephens No. 2 Griffin, SE NE SE section 27-6-10w, estimated good for 500 to 600 bbls. of oil and 15,000,000 feet of gas at 4,348-71 feet. Several major companies recently acquired acreage in the Cement district and plan early tests. Cement producing horizons range from 1,850 feet to 5,000 feet.

As 1937 gave way to 1938 a wildcat in Payne County cored saturated Wilcox sand, indicating the opening of a new pool—indications that were borne out with an 11,000-bbl. producer a few days later. This was Mid-Continent Petroleum Corp. and others No. 1 Ramsey, SW SW NW section 18-19-2e, which opened the Ramsey pool and rates as the first discovery of 1938, although it was started and drilled almost to completion in 1937, finding Wilcox pay in that year at 4,768-95 feet, total depth. It gave new enthusiasm to Oklahoma operators, and was heralded as the fore-runner of a new wildcat drilling campaign in the Sooner State.

OKLAHOMA

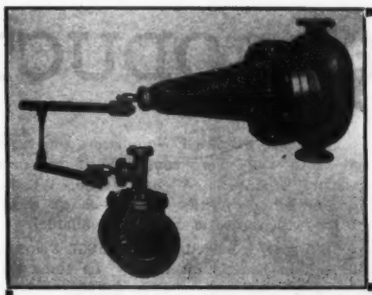
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Alfalfa	1	0	1	0
Atoka	5	0	5	0
Beckham	8	0	5	3
Caddo	17	3,110	4	5
Carter	132	4,611	25	2
Choctaw	2	0	2	0
Cleveland	29	37,000	4	0
Coal	16	1,323	8	1
Comanche	13	5	8	3
Cotton	19	65	13	1
Creek	149	4,318	48	15
Garfield	4	122	3	0
Garvin	59	5,043	13	1
Grady	8	255	4	1
Grant	3	1,516	1	0
Greer	2	0	2	0
Harmon	2	0	2	0
Haskell	1	0	1	0
Hughes	80	5,218	27	11
Jackson	18	277	9	2
Jefferson	72	3,989	14	0
Kay	24	3,004	8	2
Kiowa	15	9	11	2
Latimer	4	0	2	2
LeFlore	2	0	1	1
Lincoln	72	20,931	7	3
Logan	59	67,212	13	1
Love	3	86	1	0
Marshall	17	37	13	0
McCurtain	1	0	1	0
Murray	3	0	3	0
Muskogee	42	285	23	7
Noble	76	58,017	11	1
Okfuskee	180	21,029	29	4
Oklahoma	103	104,490	5	0
Okmulgee	96	3,154	36	11
Osage	235	12,318	88	9
Pawnee	25	21	17	2
Payne	15	309	9	3
Pittsburg	6	0	5	1
Pontotoc	488	243,137	53	5
Pottawatomie	72	10,358	18	0
Pushmataha	1	0	1	0
Seminole	224	54,661	57	2
Stephens	87	4,083	27	5
Texas	5	0	0	5
Tillman	9	818	6	0
Tulsa	156	3,540	48	12
Wagoner	6	43	4	0
Washita	1	0	1	0
Total 1937	2,672	677,156	697	123

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	164	60,599	39	6
February	180	53,676	45	17
March	197	63,161	53	7
April	342	74,739	92	13
May	267	62,607	62	8
June	268	93,374	70	10
July	275	86,539	66	9
August	210	43,294	58	9
September	227	48,234	56	11
October	169	28,962	43	8
November	156	30,021	45	9
December	219	31,950	68	16
Total 1937	2,672	677,156	697	123
Total 1936	2,565	1,264,939	649	126
Difference	107	587,783	48	3
Total 1935	2,010	1,154,182	579	110
Total 1934	1,717	673,875	465	91
Total 1933	1,093	307,323	353	72
Total 1932	1,130	647,316	381	106
Total 1931	1,058	1,941,805	374	186
Total 1930	3,466	5,628,234	1,002	403
Total 1929	3,613	1,178,945	1,245	369
Total 1928	3,679	1,016,000	1,227	491
Total 1927	4,513	1,971,081	1,443	508

SPECIALTIES FOR THE OIL INDUSTRY



LIQUID LEVEL CONTROLS

Davis Liquid Level Controls are offered in a complete range of sizes and types, including units featuring the new "DIA-BALL" packless heads. The combination at the left shows a No. 161 D Packless Float Box actuating a No. 66 B Packless Balanced Valve. Ask for descriptive bulletin.

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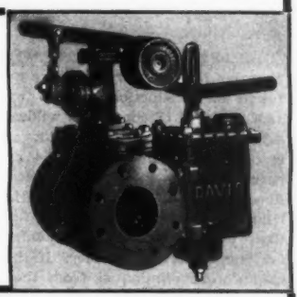

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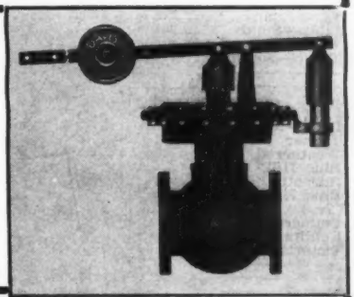

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Annual Review

RECORD DISCOVERY YEAR IN KANSAS; STATE PEAK OF PRODUCTION

By DAL DALRYMPLE

The search for untapped reserves of oil and gas in Kansas met with an amazing degree of success in 1937—a year in which wildcat operators of the Sunflower state made 84 oil and gas discoveries in 26 of the 48 counties wherein outpost tests were completed. Not all of the discoveries opened new pools, some simply extending previously discovered areas, but all were outposts and classed as wildcats at the time they were drilled.

A total of 371 wildcats were completed in the counties for which records are available. Of these, 68 found oil production and 16 were gas wells. Thus 18.3 per cent of completed wildcats were oil wells and 4.3 per cent were gas wells, an increase over the respective percentages of 16.4 and 2.9 in 1936. The percentage of wildcat dry holes completed was reduced from 80.7 in 1936 to 77.4 in 1937. A few of the wildcat completions listed as failures did not reach their objectives, being abandoned at shallow depths for one reason or another. If these shallow abandonments were eliminated from the tabulation, the percentage of discovery would be even higher with a corresponding shrinkage in the percentage of failure.

The record of drilling in proven areas of Kansas was scarcely less remarkable than the wildcat achievements. A total of 2,590 wells were completed in the Kansas counties of record, as compared with 1,721 completions in 1936 and a far stride from the low of 470 completions back in the dull days of 1931. In addition to the 2,590 recorded completions of 1937, another 100 or so wells were completed in the producing areas of Anderson, Allen, Neosho, Wilson, Montgomery and other counties of the eastern stripper district for which records are not available.

This is a fine record, indeed, and yet 1937 was not the busiest year in Kansas oil history, as some observers have said. The peak year of Kansas activity to date was 1918, when a total of 4,671 wells were completed, including 3,474 oil wells and 272 gas wells. That was in the heydey of the great Butler County fields, when Eldorado and neighboring pools were going full blast, and those intensive operations were confined to a comparatively small area.

Central Kansas Uplift

In contrast, the 1937 completions were scattered over 49 counties of southern and western Kansas. The great bulk of 1937 activity was along the crest of the central Kansas Uplift in Russell, Rice, Barton, Ellis, and Rush counties and in Reno, McPherson, Stafford and Cowley counties.

The advance of Barton County was one of the features of the year. Eleven of the 38 wildcat wells completed in Barton County opened new producing areas. Some of these were pool openers, others extended older pools. The prolific Trapp field of southern Russell County was extended across the line into northern Barton County and several subsequent Barton strikes served to further extend that important field. The Barton County sector of the Silica district accounted for much of the activity, with discoveries extending or connecting various pools. A third busy Barton sector included the Bloomer-Kraft-Breford district in the northeastern part of the county. A total of 299 wells were completed in Barton County.

Two of the larger fields of the state that were shared by Barton County with its neighbors experienced some of the most intensive activity of the year. These were the Trapp field, with the greater part of its activity in Russell County, and the Silica district straddling the Barton-Rice County line.

Russell Paced State

Russell County led the state in total completions with 455, Rice County being in second place with 414 completions. These two counties also led in daily average production, Rice setting the pace the greater part of the year.

Development of the productive Bemis pool of northern Ellis County was an outstanding development of the year. Wells with initial yield of 3,000 bbls. daily or better were common at Bemis throughout 1937. Several new areas were opened in Ellis County, but development of much of this county's proven area was retarded because of insufficient pipe line facilities, a condition common to many western Kansas pools.

Stafford County forged to the front during 1937.

KANSAS FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Lake City	Barber	7-31-13w	Pryor & Lockhart	June	Viola	4,434-4,438	1,350
Medicine Lodge	Barber	15-33-13w	Barbara Oil Co.	March	Viola	4,845-4,847	441
Ainsworth—South	Barton	10-17-13w	National Refining Co.	October	Arbuckle	3,342-3,352	255
Beaver—North	Barton	4-16-12w	Tom Palmer et al	November	Arbuckle	3,316-3,326	949
Ellinwood—North	Barton	33-19-11w	Stanolind Oil & Gas Co.	July	Arbuckle	3,328-3,350	541
Kraft	Barton	10-17-11w	C. L. Price	May	Arbuckle	3,281-3,288½	1,904
Lanterman	Barton	22-19-11w	The Texas Co.	June	Lansing-Kansas City	3,041-3,115	405
Silica—South	Barton	26-20-11w	I. T. I. O. Co.	March	Arbuckle	3,295-3,325	1,451
Trapp—South	Barton	7-16-13w	Phillips Petroleum Co.	August	Arbuckle	3,363-3,375	1,782
Trapp—Southwest	Barton	1-16-14w	Shell Petroleum Corp.	December	Arbuckle	3,266-3,296	....
_____	Butler	13-28- 6e	A. M. Landon et al	April	Bartlesville	2,722-2,737	92
_____	Butler	27-23- 4e	Kahn et al	May	Lansing-Kansas City	2,065-2,225	30
King	Butler	17-24- 4e	Roth-Faurot Oil & Gas Co.	February	Lansing-Kansas City	2,145-2,265	176
Frog Hollow	Cowley	20-32- 6e	W. M. McKnab	January	Bartlesville	3,068-3,096	187
Rock—North	Cowley	3-30- 4e	E. B. Shawver	September	Bartlesville	2,807-2,828	96
Turner	Cowley	30-32- 6e	Murta-Wilson-Bess & Gralapp	May	Sand	2,232-2,247	509
Weathered	Cowley	4-32- 3e	Earl F. Wakefield	September	Lansing-Kansas City	2,455-2,554	720
Blue Hill	Ellis	14-12-16w	J. J. Hall & Co.	August	Arbuckle	3,356-3,585	581
Burnett	Ellis	1-11-18w	Earl F. Wakefield	September	Arbuckle	3,569-3,574	1,890
Blue Hill	Ellis	11-12-16w	J. J. Hall & Co.	October	Lansing-Kansas City	3,072-3,105	1,367
Cress	Ellis	13-11-17w	Lario Oil & Gas Co.	March	Arbuckle	3,293-3,298½	2,290
Emmerman	Ellis	4-13-16w	Truro Corp., Ltd.	June	Lansing-Kansas City	3,260-3,267	1,148
Koblitz	Ellis	23-12-18w	Ted Kors et al	May	Arbuckle	3,694-3,698	225
Victoria	Ellis	18-14-16w	Norbla Oil Co.	September	Arbuckle	3,422-3,464	1,519
_____	Greenwood	25-25- 9e	A. G. McGinnis	November	Mississippi lime	2,140-2,165	10
_____	Greenwood	6-26-10e	Salome, Scott et al	January	Mississippi lime	2,122-2,161	100
_____	Greenwood	6-27-12e	Western Kansas O. R. Corp.	August	Mississippi lime	1,854-1,897	75
_____	Lyon	32-21-11e	Davis & Sory	September	Bartlesville	1,853-1,914	25
Barnholdt	McPherson	30-20- 5w	Bradley Brothers	August	Mississippi lime	3,293-3,333	131
Graber	McPherson	17-21- 1w	Derby Oil Co.	June	Misener	3,323-3,360	88
Aldrich	Ness	19-18-25w	Oriental Oil Co.	November	L. Pa. Conglomerate	4,377-4,399	1,134
Juka	Pratt	11-27-13w	Atlantic Oil Prod. Co.	August	Simpson	4,280-4,310	397
Nickerson	Reno	4-22- 7w	Pulse et al	June	Lansing-Kansas City	3,243-3,287	156
Sterling	Reno	4-22- 8w	W. E. Witt et al	December	L. Pa. Conglomerate	3,336-3,344	....
Brefeldt	Rice	7-18- 9w	Cities Service Oil Co.	May	Arbuckle	3,223-3,240	253
Cramm	Rice	15-19- 9w	Comanche Oil Co.	June	Lansing-Kansas City	2,876-2,947	1,719
Wherry—East	Rice	12-21- 7w	E. V. Holland	August	Pa. Conglomerate	3,455-3,469½	627
Soeken	Rice	10-19- 9w	Shell Petroleum Corp.	January	Lansing-Kansas City	2,905-2,923	360
Welch—North	Rice	23-20- 6w	Fred Phillips	June	Mississippi lime	3,335-3,366	252
Thurber	Rice	22-21- 9w	Gerbrand & Pulse	November	Pa. Conglomerate	3,308-3,325	(*)
Stebbins (deep)	Rooks	35- 7-17w	Snowden & McSweeney	March	Lansing-Kansas City	3,023-3,118	25
Stebbins (shallow)	Rooks	26- 7-17w	Snowden & McSweeney	January	Topeka-Lecompton	2,650-2,806	25
Allan	Russell	21-14-14w	Billings et al	June	Lansing-Kansas City	3,008-3,055	464
Coralena	Russell	17-15-13w	Carter Oil Co.	May	Arbuckle	3,183-3,188	1,570
Hall—North	Russell	20-14-13w	I. W. Murfin	November	Arbuckle	3,170-3,180	255
Ochs	Russell	12-15-14w	Cities Service Oil Co.	October	Lansing-Kansas City	3,073-3,123	866
Trapp	Russell	36-15-14w	Darby Petroleum Corp.	July	Arbuckle	3,278-3,322	465
Guernsey—South	Russell	36-14-14w	Hinkle et al	June	Lansing-Kansas City	2,901-2,946	1,073
Vaughn	Russell	17-14-14w	Empire Oil & Refining Co.	March	Lansing-Kansas City	3,004-3,034	1,482
Andover—South	Sedgwick	36-27- 2e	National Refining Co.	December	Simpson	3,087-3,099	189
Oatville	Sedgwick	18-28- 1e	I. W. Murfin, Inc.	November	Simpson	3,400-3,491	45
Derby	Sedgwick	32-28- 2e	W. G. Talbot et al	August	Stainaker	2,215-2,232	(†)
Drach	Stafford	12-22-13w	Davis-Rust	November	Arbuckle	3,693-3,705	945
Jordan	Stafford	15-25-14w	Empire Oil Refining Co.	February	Lansing-Kansas City	3,722-3,943	2,025
Kipp	Stafford	27-25-14w	Skelly Oil Co.	January	Lansing-Kansas City	3,827-3,906	1,265
Sittner	Stafford	33-21-12w	Torrey & Feaster	August	Lansing-Kansas City	3,278-3,414	1,408
Zenith	Stafford	23-24-11w	Stanolind Oil & Gas Co.	September	Simpson	3,801-3,807	954
Annees	Sumner	2-30- 4w	Magnolia Petroleum Co.	November	Simpson	4,394-4,401	378
Zyba	Sumner	7-30- 1e	W. M. McKnab	December	Simpson	3,867-3,871	....
Gugler	Trego	36-12-21w	York State Oil Co.	January	Arbuckle	3,830-3,838	181

*22,500,000 feet gas. †7,500,000 feet gas.

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and at the turn of the year some of the proven Stafford pools were being extended and discovery of new producing sectors was imminent. Discovery and development of Misener sand production in the Zenith area, near the Reno County line, was outstanding in Stafford County.

Exploration for gas in the great Hugoton district of southwestern Kansas was highly successful. Six wells classed as wildcats were completed in Grant County, all uncovering gas production. A total of 32 gas wells were completed in Grant County, without a failure to mar the record. Stevens County also had a perfect record, with 31 wells being completed, all gas. One of the Stevens wells was rated as a wildcat and extended the proven Hugoton area to the northwest.

Neosho Falls Activity

The stripper districts of eastern and southeastern Kansas were not without their moments in 1937. Activity in the Neosho Falls district of northeastern Woodson County approached the boom stage, with a townsite play and new discoveries to the south of Neosho Falls accounting for considerable activity. This particular play was extended into neighboring corners of Allen, Anderson and Coffey counties. Development of the Kincaid shoestring in Anderson County and new development in the Chanute district, in Neosho, Allen and Wilson counties and other stripper districts added to general activity. Reports of operations in these counties are sketchy, for they are not scouted and as a rule the completions are not included in the monthly reports. Several water-flood projects were proving successful in some of the older producing areas of the eastern counties.

The search for deep production in some of the western counties was unsuccessful, but valuable geological information was obtained by the drilling of key wells in rank wildcat areas. Deep production was un-

KANSAS

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
BARTON COUNTY:													
Beaver—													
Daily average	390	427	468	399	384	387	418	387	418	410	386	478	
Month	12,090	11,956	14,508	11,970	11,904	11,610	12,958	11,997	12,540	12,710	11,580	14,818	150,641
Bloomer—													
Daily average	2,235	3,264	2,997	4,455	5,316	4,741	5,027	4,694	4,479	3,570	3,568	3,396	
Month	69,285	91,392	92,907	133,650	164,796	142,230	155,837	145,514	134,370	110,670	107,040	105,276	1,452,967
Ellinwood—													
Daily average	641	677	661	602	602	608	569	572	584	544	549	549	
Month	19,871	18,956	20,491	18,060	18,662	18,240	17,639	17,732	17,520	16,864	16,470	17,019	217,524
Albert—													
Daily average	175	209	245	231	238	231	172	189	183	174	201	276	
Month	5,425	5,852	7,595	6,930	7,378	6,930	5,301	5,859	5,490	5,394	6,030	8,556	76,740
Ainsworth—													
Daily average	32	169	227	278	402	378	503	666	863	906	912	897	
Month	992	4,732	7,037	8,340	12,462	11,340	15,593	20,646	25,890	28,086	27,360	27,807	190,285
Peter—													
Daily average	1,215	1,596	1,637	1,595	1,810	1,982	2,084	2,017	2,050	1,999	2,200	2,480	
Month	37,665	44,688	50,747	47,850	56,110	59,460	64,604	62,527	61,500	61,969	66,000	76,880	690,000
Hise—													
Daily average	404	318	364	377	358	272	240	224	208	179	186	162	
Month	12,524	8,904	11,284	11,310	11,098	8,160	7,440	6,944	6,240	5,549	5,580	5,022	100,055
Rick—													
Daily average	290	275	271	243	234	174	161	126	171	154	147	161	
Month	8,990	7,700	8,401	7,290	7,254	5,220	4,991	3,906	5,130	4,774	4,410	4,991	73,057
Kowalsky—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	358	578	992	898	
Month	.....	.....	.....	.....	.....	.....	.....	.....	10,740	17,918	29,760	27,838	86,256
Kraft—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	307	437	398	613	
Month	.....	.....	.....	.....	.....	.....	.....	.....	9,210	13,547	11,940	19,003	53,700
Schrepel—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	378	526	505	509	
Month	.....	.....	.....	.....	.....	.....	.....	.....	11,340	16,306	15,150	15,779	58,575
Susank and South Susank—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	320	338	330	1,825	
Month	.....	.....	.....	.....	.....	.....	.....	.....	9,600	10,478	9,900	56,575	86,553
Miscellaneous—													
Daily average	505	520	374	481	796	501	1,221	1,375	1,047	603	915	911	
Month	15,655	14,560	11,594	14,430	24,676	15,030	37,851	42,625	31,410	18,693	27,450	28,241	282,215
BARBER COUNTY:													
Daily average	60	133	126	135	124	136	126	130	268	294	229	253	
Month	1,860	3,724	3,906	4,050	3,844	4,080	3,937	4,030	8,040	9,114	6,870	7,843	61,298
ELLSWORTH COUNTY:													
Breford-South Breford—													
Daily average	363	392	395	394	374	420	427	429	455	417	433	397	
Month	11,253	10,976	12,245	11,820	11,594	12,600	13,237	13,299	13,650	12,927	12,990	12,307	148,898
Lorraine—													
Daily average	5,342	6,230	5,339	5,491	5,074	4,569	4,507	3,887	3,963	3,381	3,091	3,080	
Month	165,602	174,440	165,509	164,730	157,294	137,070	139,717	120,497	118,890	104,811	92,730	93,930	1,635,220
Stoltenberg—													
Daily average	454	498	491	424	431	342	414	342	436	336	369	351	
Month	14,074	13,944	15,221	12,720	13,361	10,260	12,834	10,602	13,080	10,416	11,070	10,881	148,463
Stratman—													
Daily average	328	353	351	303	309	345	304	260	301	239	277	276	
Month	10,168	9,884	10,881	9,090	9,579	10,350	9,424	8,060	9,030	7,409	8,310	8,556	110,741
Miscellaneous—													
Daily average	140	163	150	138	154	255	437	562	158	143	131	120	
Month	4,340	4,564	4,650	4,140	4,774	7,650	13,547	17,422	4,740	4,433	3,930	3,720	77,910
HARVEY COUNTY:													
Hollow-Nikkell—													
Daily average	3,529	3,844	3,822	3,630	3,020	2,907	3,024	2,819	2,701	2,599	2,356	2,369	
Month	109,399	107,632	118,482	108,900	93,620	87,210	93,744	87,389	81,030	80,569	70,680	73,439	1,112,094
Halstead—													
Daily average	1,386	1,534	1,570	1,433	1,269	808	1,175	1,055	948	897	876	889	
Month	42,966	42,952	48,670	42,990	39,339	24,240	36,425	32,705	28,440	27,807	26,280	27,559	420,373
Miscellaneous—													
Daily average	74	53	33	34	27	144	28	25	110	86	151	108	
Month	2,294	1,484	1,023	1,020	837	4,320	868	775	3,300	2,666	4,530	3,348	26,465
KINGMAN COUNTY:													
Daily average	598	685	680	619	657	591	609	546	486	531	596	703	
Month	18,538	19,180	21,080	18,570	20,367	17,730	18,879	16,926	14,580	16,461	17,880	21,793	221,984
McPHERSON COUNTY:													
Graber—													
Daily average	3,545	3,676	3,637	3,415	3,837	2,962	4,196	2,847	3,243	3,324	3,177	2,685	
Month	109,895	102,928	112,747	102,450	118,947	88,860	130,076	88,257	97,290	103,044	95,310	83,235	1,233,039
Johnson-Chinberg—													
Daily average	814	841	805	809	796	892	752	653	659	595	812	935	
Month	25,234	23,548	24,955	24,270	24,676	26,760	23,312	20,243	19,775	18,445	24,360	28,985	284,558
McPherson—													
Daily average	349	333	324	345	311	321	316	276	294	262	319	285	
Month	10,819	9,324	10,044	10,350	9,641	9,630	9,796	8,556	8,820	8,122	9,570	8,835	113,507
Ritz-Canton—													
Daily average	5,508	5,402	5,437	5,081	5,194	5,628	5,274	4,975	4,785	4,586	4,558	5,140	
Month	170,748	151,256	168,547	152,430	161,014	168,840	163,494	154,225	143,550	142,166	136,740	159,340	1,872,350
Voshell—													
Daily average	2,857	2,890	2,932	2,878	2,649	2,157	2,540	2,423	2,520	2,387	2,120	2,279	
Month	88,567	80,920	90,892	86,340	82,119	64,710	78,740	75,113	75,600	73,997	63,600	70,649	931,247
Miscellaneous—													
Daily average	131	103	.....	.....	47	39	42	40	33	32	51	21	
Month	4,061	2,884	.....	.....	1,457	1,170	1,302	1,240	990	992	1,530	651	16,277
RENO COUNTY:													
Abbyville—													
Daily average	140	147	144	97	113	150	147	195	171	152	160	131	
Month	4,340	4,116	4,464	2,910	3,503	4,500	4,557	6,045	5,130	4,712	4,800	4,061	53,138
Burrton—													
Daily average	15,042	16,144	16,301	16,507	17,237	14,329	15,476	14,828	14,642	14,115	12,278	10,208	
Month	466,302	452,032	505,331	495,210	534,347	429,870	479,756	459,668	439,260	437,565	368,340	316,448	5,384,129
Hilger—													
Daily average	1,426	1,648	1,560	1,556	1,565	1,522	1,484	1,581	1,598	1,311	1,166	1,238	
Month	44,206	46,144	48,360	46,680	48,515	45,660	46,004	49,011	47,940	40,641	34,980	38,378	536,519
Lerado—													
Daily average	1,805	2,244	2,698	2,606	2,666	2,630	2,421	2,288	2,186	1,985	1,573	1,302	
Month	55,955	62,832	83,638	78,180	82,646	78,900	75,051	70,928	65,580	61,535	47,190	40,362	802,797
Haven—													
Daily average	146	170	169	173	.....	.....	.....	.....	.....	.....	.....	.....	
Month	4,526	4,760	5,239	5,190	.....	.....	.....	.....	.....	.....	.....	.....	19,715
Miscellaneous—													
Daily average	54	37	55	45	47	43	44	41	35	35	33	37	
Month	1,674	1,036	1,705	1,350	1,457	1,290	1,364	1,271	1,050	1,085	990	1,147	15,419

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covered in Pratt County, and granite peaks were found by wildcats in western Logan County and northwestern Rooks County. Two deep outposts in Barber County found oil and one uncovered gas production. The deepest wildcat was completed in Hamilton County, on the Syracuse dome, as a failure at 6,453 feet. Deep failures also were recorded in Decatur, Edwards, Finney, Ford, Harper, Kingman, Kiowa, Lane, Logan, Mitchell, Pawnee, Pratt, Scott, Sheridan, Trego and Wallace counties.

The farflung exploration for reserves in Kansas was reflected in considerable geophysical activity during the year. Some 12 seismograph crews were active as late as December in Pratt, Rooks, Kearny, Saline, Ford, Pratt and other counties.

Big Increase in Production

Despite a comparatively small market and inadequate outlets, Kansas production soared to new heights in 1937, the total for the year being placed at 69,158,432 bbls. This is 12,073,942 bbls. more than the 1936 output.

The year started off with an average production of 169,183 bbls. in January, and rose to an average of 201,735 bbls. per day in May. Notwithstanding the potential production of the state steadily increased in the course of the year production fell off in an effort to keep it equal to pipe line facilities and in line with Bureau of Mines estimate of demand. At the closing month of the year the state produced 176,168 bbls. per day when the potential was rated in excess of 3,000,000 bbls. per day. Kansas operators were producing on an average less than 6 per cent of state's rated potential.

Among the leading pools Burton in Reno County produced 5,384,129 bbls. during the year; Silica in Rice and Barton counties, 6,611,974 bbls.; Trapp in Russell and Barton counties, 3,462,430 bbls. It will be seen that no pool in the state was a very large pro-

KANSAS (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
RICE AND BARTON COUNTIES:													
Mantell—													
Daily average	94	146	133	47	.....	.....	.....	.....	.....	.....	.....	.....	
Month	2,914	4,088	4,123	1,410	.....	.....	.....	.....	.....	.....	.....	.....	12,535
Chase—													
Daily average	9,139	9,977	9,484	9,025	8,585	8,198	8,407	7,526	7,493	7,036	6,565	5,547	
Month	283,309	279,356	294,004	270,750	266,135	245,940	260,617	233,306	224,790	218,116	196,950	171,957	2,945,230
Geneseo—													
Daily average	1,998	2,256	2,339	2,107	1,985	2,075	2,067	2,188	2,617	2,341	2,242	2,133	
Month	61,938	63,168	72,509	63,210	61,535	62,250	64,077	67,828	78,510	72,571	67,260	66,123	800,979
Guldner—													
Daily average	166	165	165	146	152	85	115	114	111	98	85	97	
Month	5,146	4,620	5,115	4,380	4,712	2,550	3,565	3,534	3,330	3,038	2,550	3,007	45,547
Habiger—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	416	359	397	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,896	10,770	12,307	35,973
Keesling—													
Daily average	2,159	2,275	2,071	2,208	2,191	1,813	1,392	1,459	1,156	1,211	1,157	734	
Month	66,929	63,700	64,201	66,240	67,921	54,390	43,152	45,229	34,680	37,541	34,710	22,754	601,447
Orth—													
Daily average	273	286	291	303	302	281	274	264	256	241	234	226	
Month	8,463	7,448	9,021	9,090	9,362	8,430	8,494	8,184	7,680	7,471	7,020	7,006	97,669
Silica—													
Daily average	15,191	17,889	18,722	19,327	20,838	20,658	23,156	18,868	17,303	16,649	13,526	15,178	
Month	470,921	500,892	580,382	579,810	645,978	619,740	717,836	584,908	519,090	516,119	405,780	470,518	6,611,974
Ploog—													
Daily average	478	495	388	482	398	354	435	333	314	305	289	303	
Month	14,818	13,860	12,028	14,460	12,338	10,620	13,485	10,323	9,420	9,455	8,670	9,393	138,870
Raymond—													
Daily average	2,524	2,706	2,550	2,214	2,147	1,990	1,687	1,671	1,478	1,348	1,626	1,451	
Month	78,244	75,768	79,050	66,420	66,557	59,700	52,297	51,801	44,340	41,788	48,780	44,981	709,726
Saxman—													
Daily average	.....	.....	.....	.....	.....	.....	1,137	1,111	892	1,035	1,014	1,234	
Month	.....	.....	.....	.....	.....	.....	35,247	34,441	26,760	32,085	30,420	38,254	197,207
Edwards—													
Daily average	1,172	1,375	1,497	1,480	1,370	1,278	1,420	1,547	1,543	1,236	1,065	1,152	
Month	36,332	38,500	46,407	44,400	42,470	38,340	44,020	47,957	46,290	38,316	31,950	35,712	490,694
Stumps—													
Daily average	522	550	505	588	538	466	548	485	460	472	411	290	
Month	16,182	15,400	15,655	17,640	16,678	13,980	16,988	15,035	13,800	14,632	12,330	8,990	177,310
Wherry—													
Daily average	174	200	213	205	100	168	192	159	145	134	143	116	
Month	5,394	5,600	6,603	6,150	3,100	5,040	5,952	4,929	4,350	4,154	4,290	3,596	59,158
Hauschild—													
Daily average	2,630	3,027	2,489	2,994	2,802	2,767	921	1,202	937	1,680	1,417	1,225	
Month	81,530	84,756	77,159	89,820	86,862	83,010	28,551	37,262	28,110	52,080	42,510	37,975	729,625
Schartz—													
Daily average	956	1,156	1,277	1,611	1,553	1,596	.....	.....	.....	.....	.....	.....	
Month	29,636	32,368	39,587	48,330	48,143	47,880	.....	.....	.....	.....	.....	.....	245,944
Haferman—													
Daily average	346	452	446	687	584	379	613	439	431	376	302	314	
Month	10,726	12,656	13,826	20,610	18,104	11,370	19,003	13,609	12,930	11,656	9,060	9,734	163,284
Theede—													
Daily average	293	848	1,261	2,608	3,116	2,668	3,667	3,316	3,516	3,013	2,928	2,642	
Month	9,083	23,744	39,091	78,240	96,596	80,040	113,677	102,796	105,480	93,403	87,840	81,902	911,892
Doran—													
Daily average	173	175	148	103	125	82	120	140	94	82	103	99	
Month	5,363	4,900	4,588	3,090	3,875	2,460	3,720	4,340	2,820	2,542	3,090	3,069	43,857
Empire—													
Daily average	224	260	193	365	253	207	236	181	394	398	402	389	
Month	6,944	7,280	5,983	10,950	7,843	6,210	7,316	5,611	11,820	12,338	12,060	12,059	106,414
Miscellaneous—													
Daily average	391	326	205	366	1,232	2,133	401	1,601	1,388	1,286	1,305	1,216	
Month	12,121	9,128	6,355	10,980	38,192	63,990	12,431	49,631	41,640	39,866	39,150	37,696	361,180
ROOKS COUNTY:													
Daily average	182	479	298	584	398	216	122	536	373	425	386	377	
Month	5,642	13,412	9,238	17,520	12,338	6,480	3,782	16,616	11,190	13,175	11,580	11,687	132,660
RUSH COUNTY:													
Daily average	288	412	576	504	551	508	739	722	720	703	660	829	
Month	8,928	11,536	17,856	15,120	17,081	15,240	22,909	22,382	21,600	21,793	19,800	25,699	219,944
RUSSELL COUNTY:													
Fairport—													
Daily average	2,410	2,507	2,551	2,475	2,428	2,246	2,015	1,956	2,197	2,041	1,992	1,789	
Month	74,710	70,196	79,081	74,250	75,268	67,380	62,465	60,636	65,910	63,271	59,760	55,459	808,386
Gorham-E. Gorham—													
Daily average	4,943	6,182	5,516	5,782	6,491	6,315	5,250	5,251	5,032	4,802	4,446	4,316	
Month	153,233	173,096	170,996	173,460	201,221	189,450	162,750	162,781	150,960	148,862	133,380	133,796	1,953,985
Hall—													
Daily average	723	907	750	768	1,013	886	880	850	985	933	945	975	
Month	22,413	25,396	23,250	23,040	31,403	26,580	27,280	26,350	29,550	28,923	28,350	30,225	322,760
Neidenthal—													
Daily average	509	454	472	366	385	375	479	462	475	350	352	272	
Month	15,779	12,712	14,632	10,980	11,935	11,250	14,849	14,322	14,250	10,850	10,560	8,432	150,551
Ochs—													
Daily average	277	330	353	292	319	376	.....	648	664	559	571	294	
Month	8,587	9,240	10,943	8,760	9,889	11,280	.....	20,088	19,920	17,329	17,130	9,114	142,28.
Russell—													
Daily average	2,406	2,625	2,570	2,373	2,531	2,259	2,155	2,242	2,214	1,930	1,578	1,801	
Month	74,586	73,500	79,670	71,190	78,461	67,770	66,805	69,502	66,420	59,830	47,340	55,831	810,905
Big Creek—													
Daily average	948	1,231	1,278	1,324	1,228	1,241	1,100	1,191	1,453	1,690	1,182	1,464	
Month	29,388	34,468	39,618	39,720	38,068	37,230	34,100	36,921	43,590	52,390	35,460	45,384	466,337
Sellens—													
Daily average	917	1,018	972	868	992	884	903	769	855	802	769	719	
Month	28,427	28,504	30,132	26,040	30,752	26,520	27,993	23,839	25,650	24,862	23,070	22,289	318,078
Sullivan—													
Daily average	3,024	1,924	3,055	3,901	4,118	8,010	4,890	4,971	4,454	3,938	3,505	3,215	
Month	93,744	53,872	94,705	117,030	127,658	240,300	151,590	154,101	133,620	122,078	105,150	99,665	1,493,513
Eichman—													
Daily average	417	476	534	594	534	442	349	377	387	347	352	234	
Month	12,927	13,328	16,554	17,820	16,554	13,260	10,819	11,687	11,610	10,757	10,560	7,254	153,130
Gurney-South Gurney—													
Daily average	532	619	831	764	693	699	858	829	788	797	762	738	
Month	16,492	17,332	25,761	22,920	21,483	20,970	26,598	25,699	23,640	24,707	22,860	22,878	271,340
Trapp—													
Daily average	4,260	5,735	6,449	7,322	8,200	8,429	11,498	12,448	13,631	13,323	11,591	10,682	
Month	132,060	160,580	199,919	219,660	254,200	252,870	365,438	385,888	408,930	413,013	347,730	331,142	3,462,430
Dumler—													
Daily average	.....	.....	.....	.....	384	.....	390	640	498	544	372	391	
Month	.....	.....	.....	.....	11,904	.....	12,090	19,840	14,940	16,864	11,160	12,121	98,919

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ducer, but the peculiarity of western Kansas fields is that a single township may have a number of pools the combined production of which would make the area a major producer. For example at the close of the year Russell County was producing 29,815 bbls. per day, Rice County 26,745 bbls., Barton County 10,155 bbls., and Ellis County 10,180 bbls., and in confining the production to these figures operators were keeping most of their daily potential stored in the earth.

Barber County

In July Barbara Oil Co. completed No. 1-27 Holmes, C NW NW section 27-33-13w, Barber County, southwest of the Medicine Lodge oil and gas field, produced 20,250,000 feet of gas from pay at 4,554-4,615 feet, total depth 4,828 feet in Viola lime.

Barton County

Stanolind Oil & Gas Co. No. 1 Kowalsky, NW NW NE section 11-20-11w, was completed in May between

KANSAS (Continued)

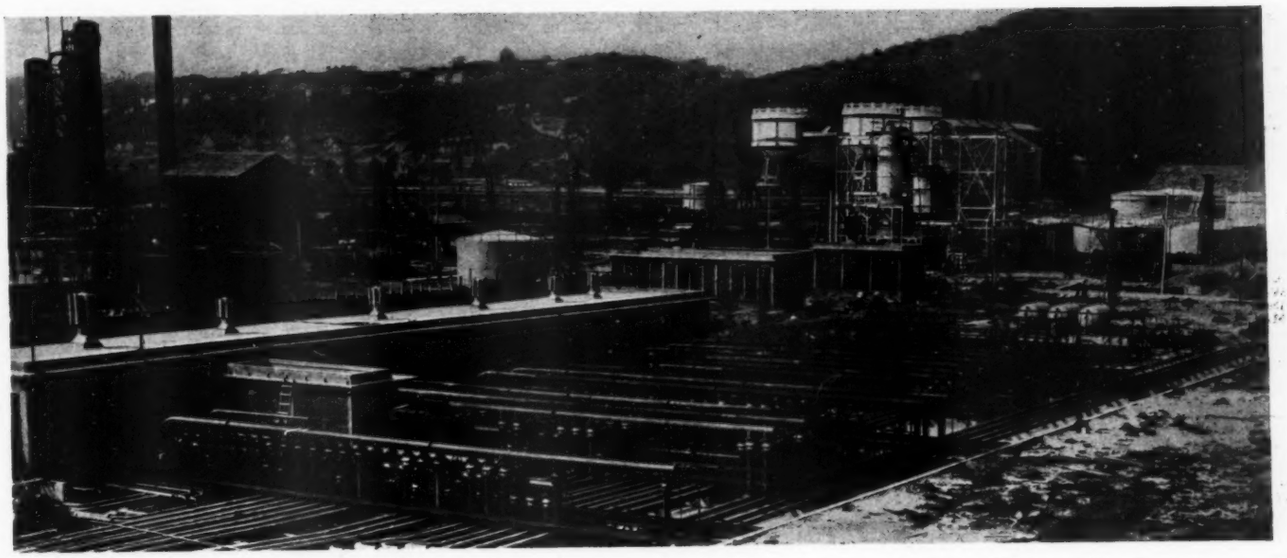
Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
Atherton-South Otherton—													
Daily average	259	324	312	252	257	304	265	289	223	265	174	132	
Month	8,029	9,072	9,672	7,560	7,967	9,120	8,215	8,959	6,690	8,215	5,220	4,092	92,811
Foster—													
Daily average	137	307	233	299	462	452	.....	.....	.....	.....	.....	.....	
Month	4,247	8,596	7,223	8,970	14,322	13,560	.....	.....	.....	.....	.....	.....	56,918
Harbaugh—													
Daily average	.....	.....	.....	.....	.....	.....	466	967	641	.....	.....	.....	
Month	.....	.....	.....	.....	.....	.....	14,446	29,977	19,230	.....	.....	.....	63,653
Vaughn—													
Daily average	.....	.....	.....	.....	.....	.....	339	452	557	632	678	752	
Month	.....	.....	.....	.....	.....	.....	10,509	14,012	16,710	19,592	20,340	23,312	104,475
Coralena—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,012	779	983	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	31,372	23,370	30,473	85,215
Letsch—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	390	511	564	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,090	15,330	17,484	44,904
Miscellaneous—													
Miscellaneous—													
Daily average	1,389	1,227	1,230	1,504	1,439	1,249	1,197	1,896	1,569	1,048	1,256	712	
Month	43,059	34,356	38,130	45,120	44,609	37,470	37,107	58,776	47,070	32,488	37,680	22,072	477,937
SCOTT COUNTY:													
Daily average	.....	.....	.....	2	573	.....	111	206	814	681	689	301	
Month	.....	.....	.....	60	17,763	.....	3,441	6,386	24,420	21,111	20,670	9,331	103,182
STAFFORD COUNTY:													
Gates—													
Daily average	163	170	166	160	145	110	136	129	123	114	122	130	
Month	5,053	4,760	5,146	4,800	4,495	3,300	4,216	3,999	3,690	3,534	3,660	4,030	50,683
Richardson—													
Daily average	1,791	1,883	1,906	2,038	2,045	2,187	2,164	2,067	1,944	1,885	2,022	1,929	
Month	55,521	52,724	59,086	61,140	63,395	65,610	67,084	64,077	58,320	58,435	60,660	59,799	725,851
St. John—													
Daily average	270	165	387	461	562	538	485	614	621	545	499	464	
Month	8,370	4,620	11,997	13,830	17,422	16,140	15,035	19,034	18,630	16,895	14,970	14,384	
Snider—													
Daily average	253	205	193	178	125	179	122	123	133	116	105	141	
Month	7,843	5,740	5,983	5,340	3,875	5,370	3,782	3,813	3,990	3,596	3,150	4,371	56,853
Jordan—													
Daily average	.....	.....	.....	.....	.....	.....	392	315	253	235	194	135	
Month	.....	.....	.....	.....	.....	.....	12,152	9,765	7,590	7,285	5,820	4,185	46,797
Miscellaneous—													
Daily average	.....	53	92	118	89	157	288	134	84	109	161	232	
Month	.....	1,484	2,852	3,540	2,759	4,710	8,928	4,154	2,520	3,379	4,830	7,192	46,348
SUMNER COUNTY:													
Caldwell—													
Daily average	139	147	142	136	132	134	124	115	110	107	101	105	
Month	4,309	4,116	4,402	4,080	4,092	4,020	3,844	3,565	3,300	3,317	3,030	3,255	45,330
Churchill—													
Daily average	886	968	958	903	882	891	883	846	859	740	768	755	
Month	27,466	27,104	29,698	27,090	27,342	26,730	27,373	26,226	25,770	22,940	23,040	23,405	314,184
Latta—													
Daily average	107	97	87	103	94	101	107	106	111	106	110	109	
Month	3,317	2,716	2,697	3,090	2,914	3,030	3,317	3,286	3,330	3,286	3,300	3,379	37,662
Oxford-West Oxford—													
Daily average	2,434	1,980	1,969	2,298	2,014	1,961	1,697	1,577	1,385	1,492	1,324	1,327	
Month	75,454	55,440	61,039	68,940	62,434	58,830	52,607	48,887	41,550	46,252	39,720	41,137	652,290
Padgett—													
Daily average	228	259	275	259	284	281	273	264	302	267	248	244	
Month	7,068	7,252	8,525	7,770	8,804	8,430	8,463	8,184	9,060	8,277	7,440	7,564	96,837
Wellington—													
Daily average	2,702	2,996	3,455	3,447	3,466	2,932	3,660	3,356	3,255	3,022	2,736	2,918	
Month	83,762	83,888	107,105	103,410	107,446	87,960	113,460	104,036	97,650	93,682	82,080	90,458	1,154,937
Miscellaneous—													
Daily average	22	24	64	84	109	98	37	93	152	136	345	163	
Month	682	672	1,984	2,520	3,379	2,940	1,147	2,883	4,560	4,216	10,350	5,053	40,386
TREGO COUNTY:													
Daily average	357	377	376	327	218	309	440	361	386	279	348	264	
Month	11,067	10,556	11,656	9,810	6,758	9,270	13,640	11,191	11,580	8,649	10,440	8,184	122,801
ELLIS COUNTY:													
Bemis—													
Daily average	2,438	2,972	3,193	3,287	3,889	4,351	4,828	4,769	5,194	4,806	5,860	6,783	
Month	75,578	83,216	98,983	98,610	120,559	130,530	149,668	147,839	155,820	148,986	175,800	210,273	1,595,862
Cress—													
Daily average	.....	.....	.....	.....	.....	.....	465	546	496	564	730	821	
Month	.....	.....	.....	.....	.....	.....	14,415	16,926	14,880	17,484	21,900	25,451	111,056
Marshall—													
Daily average	.....	.....	.....	.....	.....	.....	427	389	418	445	552	511	
Month	.....	.....	.....	.....	.....	.....	13,237	12,059	12,540	13,795	15,660	15,841	83,132
Ruder—													
Daily average	357	725	652	493	493	487	531	403	434	368	365	306	
Month	11,067	20,300	20,212	14,790	15,283	14,610	16,461	12,493	13,020	11,408	10,950	9,486	170,080
Shutts—													
Daily average	405	362	441	485	1,052	664	704	729	638	534	650	770	
Month	12,555	10,136	13,671	14,550	32,612	19,920	21,824	22,599	19,140	16,554	19,500	23,870	226,931
Solomon—													
Daily average	171	174	196	125	69	4	26	.....	14	.....	.....	.....	
Month	5,301	4,872	6,076	3,750	2,139	120	806	.....	420	.....	.....	.....	23,484
Walters—													
Daily average	.....	.....	.....	.....	483	541	686	721	746	644	753	815	
Month	.....	.....	.....	.....	14,973	16,230	21,266	22,351	22,380	19,964	22,590	25,265	165,019
Miscellaneous—													
Daily average	398	507	627	701	1,094	1,250	407	1,466	509	439	434	476	
Month	12,338	14,196	19,437	21,030	33,914	37,500	12,617	45,446	15,270	13,609	13,020	14,756	253,133
CLARK COUNTY:													
Daily average	.....	.....	120	.....	78	34	151	114	84	90	81	76	
Month	.....	.....	3,720	.....	2,418	1,020	4,681	3,534	2,520	2,790	2,430	2,356	25,469
EDWARDS COUNTY:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	34	.....	.....	.....	
Month	.....	.....	.....	.....	.....	.....	.....	.....	1,020	.....	.....	.....	1,020
NESS COUNTY:													
Daily average	21	2	.....	.....	.....	.....	47	.....	.....	.....	.....	.....	
Month	651	56	.....	.....	.....	.....	1,457	.....	.....	.....	.....	.....	2,164
PAWNEE COUNTY:													
Daily average	.....	.....	23	.....	22	13	19	13	9	22	93	39	
Month	.....	.....	713	.....	682	390	589	403	270	682	2,790	1,209	7,728
SEDGWICK COUNTY:													
Eastborough—													
Daily average	709	768	809	891	837	851	712	695	753	740	614	468	
Month	21,979	21,504	25,079	26,730	25,947	25,530	22,072	21,545	22,590	22,940	18,420	14,508	268,844
Goodrich—													
Daily average	363	411	468	395	415	411	795	588	493	621	618	616	
Month	11,253	11,508	14,508	11,850	12,865	12,330	24,645	18,228	14,790	19,251	18,540	19,096	188,864
Robbins—													
Daily average	789	744	726	592	655	586	601	553	535	517	498	521	
Month	24,459	20,832	22,506	17,760	20,305	17,580	18,631	17,143	16,050	16,027	14,940	16,151	222,384
Valley Center—													
Daily average	1,155	1,145	1,112	1,094	1,045	1,268	1,144	1,010	1,099	1,079	1,112	1,085	
Month	35,805	32,060	34,472	32,820	32,395	38,040	35,464	31,310	32,970	33,449	33,360	33,635	405,780

(Continued on Next Page)

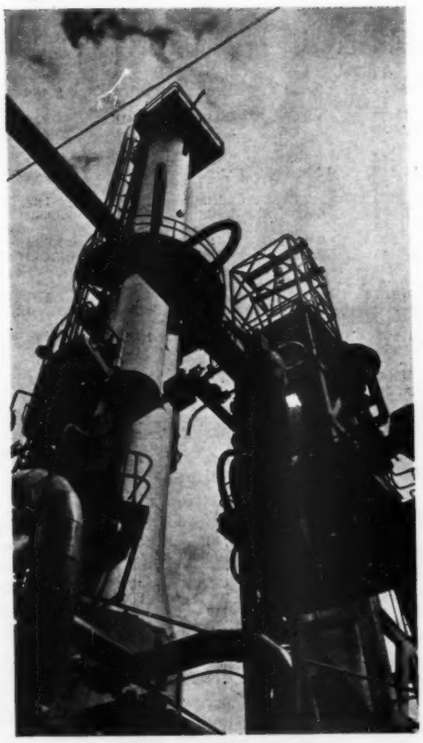
PETROLEUM REFINERIES

Engineered for Flexible Operation



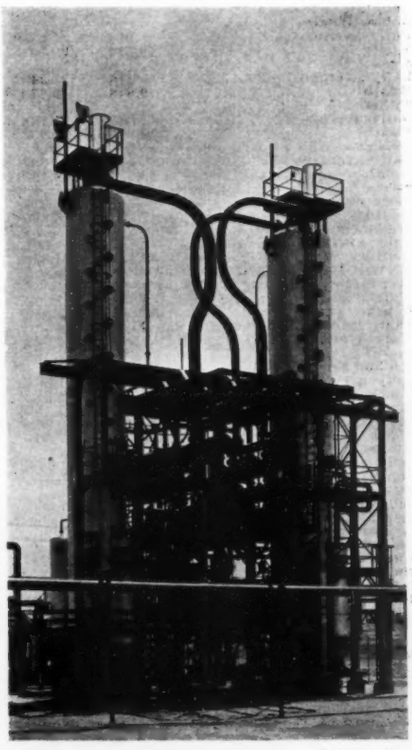
FRANCE

Compagnie Francaise de Raffinage



SOUTH AMERICA

Refining installations by Foster Wheeler are designed and constructed with **flexibility** as an inherent characteristic.



UNITED STATES

FOSTER WHEELER CORPORATION
165 BROADWAY, NEW YORK, N. Y.

FOSTER WHEELER

the Silica, Ellinwood and Peter pools. It had Arbuckle lime at 3,277 feet, total depth 3,282 feet, and made potential of 2,260 bbls. of oil.

Same company's No. 1 Stueder, SE SE SW section 26-16-13w, northeast of the Ainsworth pool, another May completion, pumped 675 bbls. of oil in 24 hours from Arbuckle lime at 3,402-12 feet, total depth.

Republic Natural Gas Co. No. 1 Bloomer, NE NW NW section 14-17-11w, west of the Breford area and northwest of the Bloomer pool, was completed in August for potential of 1,128 bbls. of oil from Arbuckle lime at 3,320 feet, total depth 3,338 feet.

Shell Petroleum Corp. No. 1 Peterman, SE NE SE section 13-16-14w, in the South Trapp district, Barton County, was completed as a 1,654-bbl. well in November. Arbuckle lime was topped at 3,241 feet, total depth 3,366 feet.

Cowley County

Ryan Consolidated Co. No. 1 Couch, SW SW SE section 13-30-5, opened a Bartlesville sand sector north of the Eastman area in Cowley County in May. It was a 43-bbl. pumper from sand at 2,796 feet, total depth 2,842 feet.

Chautauqua County

Ingot Oil Co. No. 1 McKee, SW NE SW section 21-32-12, northeast of Sedan, was completed as a 2-bbl. pumper at 1,209 feet, total depth.

Sagamore Oil Co. No. 1 Kingston, NE NE NW sec-

KANSAS (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Tl. 1937 (bbls.)
Greenwich—													
Daily average	756	1,709	1,774	1,463	1,427	1,173	1,204	1,158	1,080	921	1,054	919	
Month	23,436	47,852	54,994	43,890	44,237	35,190	37,324	35,898	32,400	28,551	31,620	28,489	443.881
Miscellaneous—													
Daily average	44	54	53	68	46	52	.....	39	12	42	61	41	
Month	1,364	1,512	1,643	2,040	1,426	1,560	.....	1,209	360	1,302	1,830	1,271	15.517
BUTLER COUNTY:													
Augusta—													
Daily average	1,404	1,594	1,587	1,598	1,554	1,573	1,511	1,426	1,377	1,412	1,410	1,391	
Month	43,524	44,632	49,197	47,940	48,174	47,190	46,841	44,206	41,310	43,772	42,300	43,121	542.207
Blankenship—													
Daily average	262	263	263	258	266	259	260	235	247	237	226	233	
Month	8,122	7,364	8,153	7,740	8,246	7,770	8,060	7,285	7,410	7,347	6,780	7,223	91.500
Elbing—													
Daily average	1,133	1,154	1,203	1,212	1,227	1,231	1,266	1,393	1,193	1,542	1,396	1,402	
Month	35,123	32,312	37,293	36,360	38,037	36,930	39,246	43,183	35,790	47,802	41,880	43,462	467.418
El Dorado—													
Daily average	8,684	9,053	9,318	9,590	9,670	9,648	9,606	9,054	8,898	8,912	8,699	8,688	
Month	269,204	253,484	288,858	287,700	299,770	289,440	297,786	280,674	266,940	276,272	260,970	269,328	3,340.426
Fox-Bush—													
Daily average	428	450	467	487	474	482	473	439	472	444	452	446	
Month	13,268	12,600	14,477	14,610	14,694	14,460	14,663	13,609	14,160	13,764	13,560	13,826	167.691
Haverhill—													
Daily average	325	295	329	305	318	314	317	322	308	296	287	289	
Month	10,075	8,260	10,199	9,150	9,858	9,420	9,827	9,982	9,240	9,176	8,610	8,959	112.756
Potwin—													
Daily average	1,122	1,092	1,022	1,135	1,189	1,191	1,192	1,212	1,139	1,165	1,124	1,133	
Month	34,782	30,576	31,682	34,050	36,859	35,730	36,952	37,572	34,170	36,115	33,720	35,123	417.331
Reynolds-Shaffer—													
Daily average	376	385	346	361	359	344	355	381	363	354	350	349	
Month	11,656	10,780	10,726	10,830	11,129	10,320	11,005	11,811	10,890	10,974	10,500	10,819	131.440
Miscellaneous—													
Daily average	1,828	1,941	1,963	1,893	1,901	1,909	1,916	1,959	2,629	1,748	2,012	1,944	
Month	56,668	54,348	60,853	56,790	58,931	57,270	59,396	60,729	78,870	54,188	60,360	60,264	718.667
COFFEY COUNTY:													
Daily average	164	146	143	136	133	137	136	131	129	132	110	112	
Month	5,084	4,088	4,433	4,080	4,123	4,110	4,216	4,061	3,870	4,092	3,300	3,472	48.929
COWLEY COUNTY:													
Burden—													
Daily average	407	406	387	367	386	375	363	350	340	351	297	303	
Month	12,617	11,368	11,997	11,010	11,966	11,250	11,253	10,850	10,200	10,881	8,910	9,393	131.695
David—													
Daily average	306	289	225	217	219	227	208	185	199	194	267	261	
Month	9,486	8,092	6,975	6,510	6,789	6,810	6,448	5,735	5,970	6,014	8,010	8,091	84.930
Eastman—													
Daily average	.....	.....	.....	.....	.....	.....	.....	243	225	229	238	229	
Month	.....	.....	.....	.....	.....	.....	.....	7,533	6,750	7,099	7,140	7,099	35.621
Rainbow Bend—													
Daily average	954	1,038	1,097	1,153	1,133	1,149	1,151	1,144	1,186	1,179	1,139	1,142	
Month	29,574	29,064	34,007	34,590	35,123	34,470	35,681	35,464	35,580	36,549	34,170	35,402	409.674
State—													
Daily average	318	349	365	320	321	332	314	314	321	322	305	306	
Month	9,858	9,772	11,315	9,600	9,951	9,960	9,734	9,734	9,630	9,982	9,150	9,486	118.172
Weathered—													
Daily average	645	784	863	943	931	940	1,027	1,043	1,217	1,046	816	829	
Month	19,995	21,952	26,753	28,290	28,861	28,200	31,837	32,333	36,510	32,426	24,480	25,699	337.336
Winfield—													
Daily average	427	439	431	431	425	421	416	382	433	417	418	411	
Month	13,237	12,292	13,361	12,930	13,175	12,630	12,896	11,842	12,990	12,927	12,540	12,741	153.561
Trees—													
Daily average	245	317	289	241	271	276	264	232	227	193	189	182	
Month	7,595	8,876	8,959	7,230	8,401	8,280	8,184	7,192	6,810	5,983	5,670	5,642	88.822
Miscellaneous—													
Daily average	1,685	1,601	1,621	1,676	1,688	1,669	1,493	1,206	2,661	1,410	1,771	1,692	
Month	52,235	44,828	50,251	50,280	52,328	50,070	46,283	37,386	79,830	43,710	53,130	52,452	612.783
GREENWOOD, LYON AND WOODSON COUNTIES:													
Atyeo, Bixley, Browning, Teeter and Scott Trend—													
Daily average	1,893	1,960	1,979	1,782	1,771	1,846	1,861	1,813	1,874	1,960	1,285	1,410	
Month	58,683	54,880	61,349	53,460	54,901	55,380	57,691	56,203	56,220	60,760	38,550	43,710	651.787
Burkett, Thrall, Polhamus and Sallyards Trend—													
Daily average	1,246	1,328	1,385	1,353	1,291	1,315	1,317	1,318	1,334	1,307	1,502	1,488	
Month	38,626	37,184	42,935	40,590	40,021	39,450	40,827	40,858	40,020	40,517	45,060	46,128	492.216
Virgil and North Virgil—													
Daily average	1,204	1,404	1,552	1,525	1,464	1,472	1,533	1,598	1,631	1,574	1,504	1,512	
Month	37,324	39,312	48,112	45,750	45,384	44,160	47,523	49,538	48,930	48,794	45,120	46,872	546.819
Seeley-Wick—													
Daily average	865	988	1,004	1,037	1,042	1,039	1,027	1,020	991	1,033	960	969	
Month	26,815	27,664	31,124	31,110	32,302	31,170	31,837	31,620	29,730	32,023	28,800	30,039	364.234
Madison—													
Daily average	702	774	719	699	680	679	673	648	645	654	680	670	
Month	21,762	21,672	22,289	20,970	21,080	20,370	20,863	20,088	19,350	20,274	20,400	20,770	249.888
Quincy—													
Daily average	1,004	1,036	920	1,038	1,103	1,107	1,181	1,250	1,220	1,259	1,221	1,217	
Month	31,124	29,008	28,520	31,140	34,193	33,210	36,611	38,750	36,600	39,029	36,630	37,727	412.542
Winterscheid—													
Daily average	781	826	841	838	811	833	840	885	853	784	797	788	
Month	24,211	23,128	26,071	25,140	25,141	24,990	26,040	27,435	25,590	24,304	23,910	24,428	300.388
Demalorie-Sowder—													
Daily average	437	484	458	485	477	479	476	474	451	455	472	471	
Month	13,547	13,552	14,198	14,550	14,787	14,370	14,756	14,694	13,530	14,105	14,160	14,601	170.850
Hamilton—													
Daily average	435	449	456	430	383	393	388	409	427	385	421	410	
Month	13,485	12,572	14,136	12,900	11,873	11,790	12,028	12,679	12,810	11,935	12,630	12,710	151.548
Lamont—													
Daily average	405	442	452	406	392	388	336	336	361	368	368	366	
Month	12,565	12,376	14,012	12,180	12,152	11,640	10,416	10,416	10,830	11,408	11,040	11,346	140.371
Miscellaneous—													
Daily average	1,107	1,227	1,518	1,372	1,416	1,391	1,333	1,388	2,261	1,490	1,386	1,407	
Month	34,317	34,356	47,058	41,160	43,896	41,730	41,323	43,028	67,830	46,190	41,580	43,617	526.085
MARION COUNTY:													
Daily average	824	996	926	990	1,059	1,027	1,011	941	938	970	877	875	
Month	25,544	27,888	28,706	29,700	32,829	30,810	31,341	29,171	28,140	30,070	26,310	27,125	347.634
WESTERN ELK COUNTY:													
Daily average	1,091	1,130	1,127	1,123	1,087	1,110	1,113	1,121	1,136	967	1,086	1,074	
Month	33,821	31,640	34,937	33,690	33,697	33,300	34,503	34,751	34,080	29,977	32,580	33,294	400.270
EASTERN COUNTIES:													
Daily average	7,016	7,210	7,116	7,120	7,216	7,277	7,087	6,670	7,005	6,694	6,794	6,811	
Month	217,496	201,880	220,596	213,600	223,696	218,310	219,697	206,770	210,150	207,514	203,820	211,141	2,554,670
Daily average	169,183	187,023	189,256	194,241	201,735	196,949	200,931	195,573	197,371	187,742	178,155	176,168	189,475
Total 1937	5,244,673	5,236,644	5,866,936	5,827,230	6,253,785	5,908,470	6,228,861	6,062,763	5,921,190	5,820,022	5,344,650	5,461,208	69,158,432
Total 1936	4,343,751	4,002,348	4,675,296	4,835,370	4,754,687	4,442,040	4,839,441	5,160,601	4,917,180	4,995,805	4,816,320	5,301,651	57,084,490
Total 1935	4,189,340	4,094,412	4,623,154	4,373,670	4,610,940	4,436,880	4,710,884	4,462,140	4,411,260	4,702,979	4,279,920	4,468,867	53,364,446
Total 1934	3,360,865	3,173,324	3,958,142	3,939,840	4,083,134	3,971,070	4,122,659	3,971,100	3,607,200	3,850,634	3,721,830	3,994,319	45,754,117
Total 1933	2,871,282	2,801,512	3,604,539	3,492,990	3,277,103	3,210,150	4,068,130	3,908,294	3,729,000	3,287,643	3,599,400	3,455,725	41,305,768

tion 17-32-10, opened a gas area in Chautauqua County late in January. It had Kansas City lime pay at 1,438 feet, total depth, and produced 4,000,000 feet of gas.

Robinson and others opened an area northeast of Sedan in September at No. 1 Foster, SW cor. section 6-33-12. It had Arbuckle lime at 1,981 feet, total depth 1,986 feet, and was a 15-bbl. pumper.

A new area was opened east of Cedarvale early in December at W. G. Buffington No. 1 Fisher, C W half SW NW section 10-34-9, which pumped 25 bbls. of oil daily from Altamont lime at 1,648 feet, total depth 1,679 feet.

KANSAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Barber	16	2,952	5	6
Barton	299	208,824	54	8
Butler	68	5,903	23	0
Chase	5	137	4	0
Chautauqua	74	1,307	28	16
Coffey	16	333	6	0
Cowley	74	25,570	36	2
Decatur	1	0	1	0
Edwards	3	0	3	0
Elk	32	882	13	0
Ellis	234	268,381	40	0
Ellsworth	55	31,839	12	0
Finney	1	0	1	0
Grant	32	0	0	32
Greenwood	79	2,711	33	1
Hamilton	1	0	1	0
Harper	2	0	2	0
Harvey	55	25,958	13	0
Haskell	1	0	1	0
Kearny	3	0	1	2
Kingman	4	150	2	1
Kiowa	1	0	1	0
Lane	1	0	1	0
Logan	2	0	2	0
Lyon	3	45	2	0
Marion	8	220	3	1
McPherson	90	35,129	20	1
Mitchell	1	0	1	0
Morton	1	0	0	1
Ness	3	1,184	1	0
Osborne	4	0	4	0
Pawnee	6	352	4	0
Pratt	6	351	4	0
Reno	155	80,132	28	4
Rice	414	260,170	68	1
Rooks	24	4,818	14	0
Rush	33	6,822	10	6
Russell	455	441,613	43	0
Saline	2	0	2	0
Scott	6	2,632	2	0
Sedgwick	27	4,755	15	1
Seward	2	0	0	2
Sheridan	1	0	1	0
Stafford	82	41,657	34	0
Stevens	31	0	0	31
Sumner	65	20,670	20	0
Trego	15	749	11	0
Wallace	1	0	1	0
Woodson	96	3,047	35	1
Total	2,590	1,479,293	606	117

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	126	80,790	30	5
February	148	87,474	42	2
March	156	97,304	31	6
April	242	155,425	50	4
May	199	143,949	43	7
June	246	155,329	66	10
July	295	177,987	61	16
August	225	118,035	47	14
September	276	108,145	67	14
October	229	116,539	48	10
November	236	152,082	53	14
December	212	86,234	68	15
Total 1937	2,590	1,479,293	606	117
Total 1936	1,721	965,777	446	61
Difference	869	513,516	160	56
Total 1935	1,210	845,522	281	39
Total 1934	835	300,789	221	22
Total 1933	540	193,736	134	16
Total 1932	572	193,139	188	21
Total 1931	470	144,921	129	112
Total 1930	1,036	288,296	423	168
Total 1929	1,058	165,611	453	52
Total 1928	1,157	101,043	455	115

Elk County

An oil producing area was opened in Elk County at Tyrell and others No. 1 Sellars, SE cor. section 11-31-9, west of Moline, in July. It was an old wildcat deepened from 1,522 feet to Mississippi lime at 2,300 feet, total depth 2,322 feet, and pumped 170 bbls. of oil daily.

Kearny County

J. A. Murphy No. 1 Campbell, NW NW SW section 32-25-35w, opened a gas area in Kearny County in April. It produced 1,500,000 feet of gas at 2,793 feet, total depth.

Grant County

Six wells classed as wildcats were completed in Grant County, opening gas sectors, as follows: Columbia Fuel Co. No. 1 Gray, C SE section 3-29-35w, total depth 2,760 feet, 5,000,000 feet of gas. Same company's No. 1 Alderman, C SW section 18-29-35w, total depth 2,715 feet, 4,000,000 feet of gas. Panhandle Eastern Pipe Line Co. No. 1 Taggert, C section 11-30-37w, total depth 2,885 feet, 2,750,000 feet of gas. United Production Co. No. 1 Blake, C SW section 21-30-36w, total depth 2,751 feet, plugged back to 2,570 feet, 2,300,000 feet of gas. R. K. Wilson No. 1-20 Bank, C NE section 20-28-37w, total depth 2,685 feet, 7,000,000 feet of gas. Same operator's No. 1-22 Helmly, C SE section 22-28-37, total depth 2,720 feet, 7,642,000 feet of gas.

eward County

Helmerich & ayne No. 1 Hyde, C SW section 14-31-34w, an old ildcat in Seward County, produced 3,000,000 feet of gas and was recompleted in March after plugging back from 2,850 feet, total depth, to 2,745 feet and shooting.

Stevens County

Kuhn Brothers and others No. 1 Youngren, SE SE NW section 1-32-39w, wildcat on northwest edge of the Hugoton field, Stevens County, produced 8,250,000 feet of gas late in August and was completed at 2,600 feet, total depth.

Sumner County

The Rutter pool in Sumner County was opened in January at Rose Spring Drilling Co. and others No. 1-A Rutter, C NW NW section 21-33-2e, Sumner County, a 127-bbl. oil well. It had Chat pay at 3,225-38 feet, total depth, and plugged back to 3,233 feet.

Faulkner and others No. 1 Nevitt, NE NW NE section 36-32-2e, an old wildcat south of the Oxford pool, Sumner County, was a 35-bbl. well after plugging back from 3,570 feet to 2,830 feet and acidizing, in July.

Woodson County

Diller Oil & Gas Co. and H. L. Mourer opened the Draper pool in Woodson County, eastern Kansas, at No. 1 Draper, NE NE NW section 10-24-17, in August for initial production of 198 bbls. of oil from the first break in Mississippi lime at 1,203 feet, total depth 1,208 feet. A. C. Thompson and others opened another producing area at No. 1 Union Central, NE SW NE section 8-24-17, which had pay at 1,216 feet, total depth 1,219 feet, and produced 40 bbls. of oil naturally before acidizing. Trinity Oil & Gas Co. started the Neosho Falls townsite play during the summer with a 150-bbl. well on Lieurance property.

ANNUAL REPORT

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Annual Review

36 OIL AND GAS DISCOVERIES MADE IN SOUTHWEST TEXAS AREA

By F. L. SINGLETON

Drilling operations in the Southwest Texas district during 1937 reached a new peak, resulting in a record number of new pools, as well as deeper sands and important extensions in many of the older proven fields.

The total number of completed wells reached 3,080, an increase of 239 over the previous year. Initial production of the completed wells showed a decrease of 329,312 bbls. Of the total 2,121 were oil producers, 850 dry holes and 119 gas wells.

Nueces County Discoveries

Twelve miles southwest of Corpus Christi in the Ramon De Ynojosa Survey, Nueces County, Cosner and Cosner No. 1 Stockton discovery well of the London field, drilled to a total depth 7,005 feet where several showings were logged on a Schlumberger survey. The well was taken over by the Wellington Oil Co. which completed it for a producer through perforated casing at 4,698-4,703 feet. Additional development failed to find any large production.

Approximately 9,000 feet southeast of the above field, Allen and Seaboard Oil Corp. No. 2 Chapman opened the Chapman Ranch field in March, with an initial flow of 5 bbls. per hour through a one-eighth inch choke. Production was obtained by perforating the casing in sand at 6,464-84 feet. The discovery is located in section 38 of the Laureles Farm Tracts. Additional development, a quarter mile east of the discovery resulted in prolific production from a new sand at 5,046-58 feet which has been an incentive for additional field work.

Wellington Oil Co. No. 1 Dugger, 2 miles south of production of the Ciara Driscoll field opened the South Ciara Driscoll field in May for a good producer in sand at 3,913-29½ feet. In the central part of the county, the Luby field, Block 4 of the Petronilla Grant was opened in May by Seaboard Oil Corp. No. 1 James P. Luby. It flowed 156 bbls. per day through a three-sixteenths inch choke from perforations at 5,048½-50½ feet.

In the southwestern part of Nueces County, Camp Production No. 1 Wardner opened commercial production of 49 gravity oil in the old Stratton field. Production was from the Frio formation through perforated casing at 5,992-6,002 feet. Northwest of the Agua Dulce field in the Richard King Farm Lot, Block 6, Southern Minerals Corp., opened the Richard King field, late in November with the completion of No. 2 King. Production was obtained through perforated casing at 4,017-20 feet.

The discovery of producing horizons at 5,500, 6,700 and 6,900 feet in the Saxet field was responsible for that field holding its rank as the most active in the district. These sands were developed on the west and northeast edge of the field.

An Important Find

The most outstanding new field was opened in December by the Magnolia Petroleum Co. and others on the Seelingson Ranch, southeastern Jim Wells County. Production is from the Frio formation through perforated casing at 6,585-95 feet and the well flowed 1,368 bbls. per day through a quarter-inch choke, with tubing pressure 2,100 pounds. The well is on a large block held jointly with the Sinclair Prairie Oil Co. and Transwestern Oil Co., centering in the Jaboncillos Grant.

Interest during the past year was centered on the McCampbell field where the discovery of a new sand at 7,100 feet resulted in an extensive drilling program. The sand was opened in April by the Buckingham Oil Co. and is much more prolific than the original 6,500-foot sand.

In San Patricio County, Phillips Petroleum Co. opened the Midway field in March with the completion of No. 1 Henry Schmidt, 4 miles west of Gregory and 2½ miles miles southeast of Taft, in section 81 of the Paul Subdivision. The well flowed 60 barrels of 34 gravity oil per day from sand at 5,316-19 feet. Eight additional oil wells have been completed, extending the field over several hundred acres.

Midway between the Placedo and Keeran fields, Stanolind Oil and Gas Co. No. 1 Henderson and Pickering Block 2, Eugene Benavides Survey, perforated casing at 6,372-75 feet and it flowed 360 barrels of fluid of which 35 per cent was salt water. The discovery was made December 18. East of the town of Victoria in the T.&N.O. Survey, the Telferner gas field was found by Magnolia Petroleum Co. No. 1 Willie Beck, completed as a dry gas well through perforated casing at 3,575-85 feet. Additional development has been unsuccessful.

The Strauch field in Bee County was opened in February when Dirks Brothers completed No. 1 Strauch, section 19, Uranga Grant. Initial production was 225 bbls. per day through a three-sixteenths inch choke from sand bottomed at 4,377 feet.

Laredo's Best New Pool

The most important discovery in the Laredo district was the Benavides field (North Sweden) in Duval County. The discovery was made in April by Frank Gravis No. 1 Vaello Puig, completed in sand at 4,762-68 feet for an initial production of 206 bbls. At the close of the year over 100 oil wells had been completed proving up approximately 6,000 acres. Three sands have been developed at 3,900, 4,900 and 5,300 feet, the last named being in the Cockfield. It is the most important deep production ever developed in the district. The producing trend of the field is defined only on the north.

The above discovery followed the opening of the Sweden field, about 5 miles southwest, which was brought in by Hiawatha Oil & Gas Co. on the Southland Life Insurance Co. lease, section 15, Agua Poquita Grant. The Cockfield was topped at 5,704 feet and the well was completed in a screen setting at 5,845-67 feet for an initial production of 108 bbls. Although additional development proved disappointing, several wells remain to be drilled before the area is condemned. The discovery was made February 6.

The Rancho Solo gas field, 18 miles south of Freer, received its first oil well April 5 with the completion of Bunn Brothers and others No. 2-B Peters which flowed 54 bbls. in 12 hours through a five-eighths inch choke. Southwest of the Seven Sisters field and separated from the field proper by dry holes, A. J. Brinkoetter's No. 1-A Garza, Survey 212, opened the South Seven Sisters field in April with an initial pumping guage of 174 bbls. daily. Production has been developed at 2,646-56 feet and at 1,550-66 feet.

Two of the most active fields, Killam and Oilton in Webb County, discovered in April and August respectively, were responsible to a large extent for the districts high rate of completions. Killam was brought by the completion of O. W. Killam No. 1 Laurel, which flowed 150 bbls. of 22 gravity oil from the Jackson sand at 2,031-35 feet. At the close of the

SOUTHWEST TEXAS FIELDS DISCOVERED DURING 1937

Field—	County	Discovery well	Date of completion	No. wells comp. to date	Well spacing	Initial producing capacity— Bbls.	Test	Choke or tubing
New Batesville	Zavalla	H. F. Wilcox O. & G. Co. No. 1 Gilliam	5-17-37	1	150-300	1,460	8 hrs.	Casing
Ezzell	McMullen	Edwin M. Jones No. 4 Ezzell	5-31-37	36	330-660	45	4 hrs.	Pumping 2" bbl.
Ellison Young	Caldwell	Memphis Nat. Gas Co. No. 2 J. M. Young	5-10-37	13	150-300	432	24 hrs.	⅛" choke
Hantho-Nelson	Bastrop	Hantho-Nelson, Inc., No. 1 K. M. Litton	9-28-37	1	150-300	96	9 hrs.	Pumping 2" bbl.
Carver-Kallison	Guadalupe	Carver-Kallison No. 1 Rumpf	10-24-37	1	150-300	182	24 hrs.	⅛" choke
Lost Mule	Caldwell	No official completion received to date.						
Frio Town	Frio	No official completion received to date.						
North McFaddin	Victoria	Transwestern Oil Co. No. 1-A McFaddin	10-19-37	1	150-300	155	24 hrs.	7/32" choke
McMurray	Bee	Dirks Bros. No. 1 Tom Strauch	3-18-37	2	150-300	146	24 hrs.	3/16" choke
South Burnell	Bee–Karnes	Pettus Oil & Ref. Co. No. 1-A McKinney	7-25-37	22	330-660	77	12 hrs.	¼" choke
Slick	Gol.–DeWitt	Southwest Dev., Synd., Ltd., No. 1 Poetter	2-22-37	1	150-300	120	24 hrs.	2" tubing
Ganado	Jackson	Texas Co. No. 1 T. N. Mauritz et al	4-10-37	2	150-300	70	24 hrs.	¼" choke
Benavides	Duval	Frank Gravis No. 1 Vaello-Puig Hrs.	4-18-37	108	330-660	109	12 hrs.	5/32" choke
Chapman Ranch	Nueces	Seaboard Oil Corp. No. 2 Chapman	3-17-37	2	150-300	213	24 hrs.	11/64" choke
Charamouscа	Duval	N. V. Duncan No. 3 Warden-Drought	2- 1-37	15	150-300	117	24 hrs.	⅜" choke
East Bruni	Webb	O. W. Killam No. 50 Bruni Estate	4-22-37	16	330-660	65	24 hrs.	¼" choke
El Tanque	Starr	G. E. Dodd, Trs., No. 1 Wood	3-24-37	9	150-300	400	24 hrs.	5/16" choke
Killam	Webb	O. W. Killam No. 1 Laurel Bros.	4-13-37	46	150-300	171	24 hrs.	Pumping 2" bbl.
Labbe	Duval	Magnolia Petroleum Co. No. 2 Labbe Ranch	2-22-37	16	150-300	10	1 hr.	Pumping 2" bbl.
La Blanca	Hidalgo	McCollum-Pantano No. 1 Engleman	1-13-37	6	150-300	48	24 hrs.	½" choke
Lamar	Aransas	Barnsdall Oil Co. No. 2 Edwards	9-18-37	1	150-300	52	17 hrs.	⅜" choke
Los Animas	Jim Hogg	No official completion received to date.						
London	Nueces	Wellington Oil Co. No. 1 Stockton	1-17-37	2	150-300	52	5 hrs.	⅜" choke
Luby	Nueces	Seaboard Oil Corp. No. 1 Luby	6-24-37	15	466-933	156	24 hrs.	3/16" choke
Lundell	Duval	Govt. Wells Oil Co. No. 2 Lundell	7- 1-37	11	150-300	32	6 hrs.	Pumping 2" bbl.
Midway	San Patricio	Phillips Petroleum Co. No. 1 Schmidt	4-18-37	9	466-933	50	24 hrs.	⅜" choke
No. Samfordyce	Starr	King-Woods-Graham No. 1 Yturria	7-17-37	2	330-660	116	24 hrs.	3/16" choke
Oilton	Webb	Gypsy Oil Co. No. 1 Martin	8- 1-37	67	150-300	104	17 hrs.	Pumping 2" bbl.
Rancho Solo	Duval	Bunn Bros. & Coates, Inc., No. 2-B Peters	4- 5-37	4	150-300	54	12 hrs.	⅜" choke
Ricaby	Starr	Moss & Heard No. 1 Ricaby	1-25-37	1	150-300	20	24 hrs.	Pumping 2" bbl.
Richard King	Nueces	Southern Minerals Corp. No. 2 King	11- 9-37	1	150-300	22	6 hrs.	½" choke
Sandia	Jim Wells	O. W. Killam No. 8 Wade	2-14-37	3	150-300	37	12 hrs.	½" choke
So Ciara Driscoll	Nueces	Wellington Oil Co. No. 1 Dugger	5- 5-37	2	330-660	70	6 hrs.	¾" choke
So. Seven Sisters	Duval	A. J. Brinkoetter No. 1-A Garza	4-10-37	3	150-300	174	24 hrs.	Pumping 2" bbl.
Stratton	Nueces	Camp Prod. Co. No. 1 Wardner	4-23-37	2	150-300	59	24 hrs.	3/16" choke
Sweden	Duval	Hiawatha O. & G. No. 1 Southland Life Ins.	1-30-37	5	466-933	18	4 hrs.	⅛" choke
Thomas Lockhart	Duval	Thomas Est. & Lockhart Bros. No. 1 Parr	4-15-37	4	150-300	125	24 hrs.	½" choke

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year 54 wells having a daily production of 1,155 bbls. had been completed and the field was practically drilled up. It is 2½ miles northeast of Olfton in sections 786, 333 and 1099. About 3½ miles southwest of the field in the northeast corner of Survey 458, J. R. B. Moore No. 1 Garcia was brought in August 9 for an initial production of 125 bbls. Sand was cored at 1,915-20 feet. Practically all acreage is controlled by independent operators who completed 72 wells, the majority of which are pumping. A recent completion midway between the two fields indicates that the two pools will be joined, and a revival of drilling is anticipated.

Darby Petroleum Co. No. 1-B Holbein, 5 miles east of the Henne-Winch-Farris field, opened the Las Animas field October 18 when it flowed 3,000,000 feet of gas daily through perforated casing at 1782½-88 feet. Same company's No. 2-B Holbein, south of gas production opened production from the same sand. Location is in the Holbein Subdivision.

Three fields were opened in Starr County. Three miles northeast of the Rio Grande City field, South Ricaby (El Tanque) Portion 84, was brought in April 3 for an initial production of 45 bbls. per day through a three-sixteenths inch choke from sand at 1,719-35 feet. Approximately 2,000 feet north of production at the Samfordyce field, E. A. Graham and Kingwood Oil Co. No. 1 in Portion 100, found a new sand at 2,991-3,007 feet in July for an initial production of 15 bbls. per hour through a three-eighths inch choke. The Ricaby field, Portion 83, was brought in February 2

SOUTHWEST TEXAS

(Laredo District)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
ALTA MESA:													
Daily average	189	189	441	486	666	540	445	467	483	476	407	378	
Month	5,859	5,292	13,671	14,580	20,646	16,200	13,795	14,477	14,490	14,756	12,210	11,708	157,684
AVIATOR:													
Daily average	374	404	383	285	355	355	332	346	353	335	363	348	
Month	11,594	11,312	11,873	8,550	11,005	10,650	10,292	10,726	10,590	10,385	10,890	10,792	128,659
CHARAMOUSA:													
Daily average	.....	.....	.....	.....	.....	.....	334	471	573	341	315	329	
Month	.....	.....	.....	.....	.....	.....	10,354	14,601	17,190	10,571	9,450	10,192	72,358
COLE:													
Daily average	6,267	7,690	7,275	6,327	6,730	6,562	7,228	8,500	9,282	9,090	7,703	7,563	
Month	194,277	215,320	225,525	189,810	208,630	196,860	224,068	263,500	278,460	181,790	231,090	234,482	2,643,812
COLMENA:													
Daily average	53	177	405	417	426	465	393	475	427	378	356	378	
Month	1,643	4,956	12,555	12,510	13,206	13,950	12,183	14,725	12,810	11,718	10,680	11,733	132,669
COMITAS:													
Daily average	3,015	2,523	2,517	2,187	2,100	1,852	816	720	658	586	531	635	
Month	93,465	70,644	78,027	65,610	65,100	55,560	25,296	22,320	19,740	18,166	15,930	19,684	549,562
CUEVITAS:													
Daily average	292	452	451	440	450	450	599	702	702	702	406	472	
Month	9,052	12,656	13,981	13,200	13,950	13,500	18,569	21,762	21,060	21,762	12,180	14,638	186,310
DRISCOLL:													
Daily average	432	463	467	471	488	499	750	1,351	1,204	1,270	2,734	1,057	
Month	13,392	12,964	14,477	14,130	15,128	14,970	23,250	41,881	36,120	39,370	82,020	32,769	340,471
EAGLE HILL:													
Daily average	298	330	294	332	337	337	331	415	390	337	311	311	
Month	9,238	9,240	9,114	9,960	10,447	10,110	10,261	12,865	11,700	10,447	9,330	9,656	122,368
ESCOBAS:													
Daily average	2,252	2,260	2,563	2,699	2,600	2,641	2,667	2,600	2,358	2,430	2,066	2,445	
Month	69,812	63,280	79,453	80,970	80,600	79,230	82,677	80,600	70,740	75,330	61,980	75,799	900,471
EZZELL:													
Daily average	.....	.....	.....	.....	.....	55	82	158	138	746	1,054	1,703	
Month	.....	.....	.....	.....	.....	1,650	2,542	4,898	4,140	23,126	31,620	52,783	120,759
GOVERNMENT WELLS:													
Daily average	14,415	16,529	16,981	15,264	15,425	15,301	14,818	17,453	16,659	15,771	14,335	14,313	
Month	446,865	462,812	526,411	457,920	478,175	459,030	459,358	541,043	499,770	488,901	430,050	443,705	5,694,040
HOFFMAN:													
Daily average	1,021	1,535	1,920	1,501	1,515	1,509	1,630	2,224	2,297	2,286	2,388	2,269	
Month	31,651	42,980	59,520	45,030	46,965	45,270	50,530	68,944	68,910	70,866	71,640	70,334	672,640
JACOB:													
Daily average	822	799	834	753	632	777	416	472	617	592	605	869	
Month	25,482	22,372	25,854	22,590	19,592	23,310	12,896	14,632	18,510	18,352	18,150	26,925	248,665
KILLAM:													
Daily average	.....	.....	.....	21	305	484	438	557	623	784	635	1,135	
Month	.....	.....	.....	630	9,455	14,520	13,578	17,267	18,690	24,304	19,050	35,198	152,692
KOHLER:													
Daily average	168	131	209	201	234	163	201	215	170	188	154	224	
Month	5,208	3,668	6,479	6,030	7,284	4,890	6,231	6,665	5,100	5,828	4,620	6,944	68,917
LABBE:													
Daily average	.....	17	17	68	45	42	398	520	326	337	306	361	
Month	.....	476	527	2,040	1,395	1,260	12,338	16,120	9,780	10,447	9,180	11,199	74,762
LA BLANCA:													
Daily average	6	41	59	72	172	106	261	250	300	243	541	526	
Month	186	1,148	1,829	2,160	5,332	3,180	8,091	7,750	9,000	7,533	16,230	16,306	78,745
LOMA NOVIA:													
Daily average	14,823	19,788	19,810	16,908	17,096	16,538	15,843	20,428	19,557	17,936	16,419	16,202	
Month	450,575	554,064	614,110	507,240	529,976	496,140	491,133	633,268	586,710	556,016	492,570	502,274	6,423,076
LOPEZ:													
Daily average	6,700	8,836	9,351	8,129	8,297	8,353	8,147	10,037	9,490	9,004	7,769	7,757	
Month	207,700	247,408	289,881	243,870	257,207	250,590	252,557	311,147	284,700	279,124	233,070	240,466	3,097,720
McMULLEN:													
Daily average	189	186	185	185	210	192	187	192	179	177	140	275	
Month	5,859	5,208	5,735	5,550	6,510	5,760	5,797	5,952	5,370	5,487	4,200	8,520	69,948
MOCA:													
Daily average	306	420	402	392	383	383	391	390	376	375	380	291	
Month	9,486	11,760	12,462	11,760	11,873	11,490	12,121	12,090	11,280	11,625	11,400	9,020	136,367
NORTH SWEDEN:													
Daily average	.....	.....	.....	22	90	342	1,163	2,607	4,453	5,688	5,442	5,929	
Month	.....	.....	.....	660	2,790	10,260	36,053	80,817	133,590	176,328	163,260	183,800	787,558
OILTON:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	756	930	1,315	1,556	
Month	.....	.....	.....	.....	.....	.....	.....	.....	22,680	28,830	39,450	48,227	139,187
PETERS:													
Daily average	109	162	206	168	175	175	169	215	194	181	163	161	
Month	3,379	4,536	6,386	5,040	5,425	5,250	5,239	6,665	5,820	5,611	4,890	4,991	63,232
PIEDRA LUMBRE:													
Daily average	627	715	721	705	869	905	886	968	1,004	1,027	1,035	959	
Month	19,437	20,020	22,351	21,150	26,939	27,150	27,466	30,008	30,120	31,837	31,050	29,721	317,249
RANDADO:													
Daily average	301	305	263	262	250	250	244	297	260	212	247	272	
Month	9,331	8,540	8,153	7,860	7,750	7,500	7,564	9,207	7,800	6,572	7,410	8,432	96,119
RICABY:													
Daily average	.....	6	4	83	240	162	261	444	312	253	138	269	
Month	.....	168	124	2,490	7,440	4,860	8,091	13,764	9,360	7,843	4,140	8,330	66,610
RIO GRANDE CITY:													
Daily average	310	243	293	261	300	300	109	138	136	128	114	127	
Month	9,610	6,804	9,083	7,830	9,300	9,000	3,379	4,278	4,080	3,968	3,420	3,937	74,689
SAMFORDYCE:													
Daily average	5,412	6,896	6,555	5,954	5,853	5,463	5,307	5,277	5,183	3,925	3,142	4,263	
Month	167,772	193,088	203,205	178,620	181,443	163,890	164,517	163,587	155,490	121,675	94,260	132,153	1,919,700
SARNOSA:													
Daily average	770	946	913	831	831	831	804	883	837	836	735	774	
Month	23,870	26,488	28,303	24,930	25,761	24,930	24,924	27,373	25,110	25,916	22,050	23,983	303,638
SCHOTT:													
Daily average	333	374	383	287	397	397	404	377	393	333	335	383	
Month	10,323	10,472	11,873	11,610	12,307	11,910	12,524	11,687	11,790	10,323	10,050	11,873	136,742
SEVEN SISTERS:													
Daily average	8,178	10,574	10,548	9,471	9,587	9,625	9,292	11,815	11,028	10,134	9,447	9,323	
Month	253,518	296,072	326,988	284,130	297,197	288,750	288,052	366,265	330,840	314,154	283,410	289,016	3,618,392
SWEDEN:													
Daily average	.....	81	131	183	182	161	154	234	221	304	238	243	
Month	.....	2,268	4,061	5,490	5,642	4,830	4,774	7,254	6,630	9,424	7,140	7,520	65,033
Daily average	68,082	83,524	85,030	96,184	78,259	77,290	76,003	92,708	92,633	85,788	82,878	84,698	81,906
Total 1937	2,110,542	2,338,672	2,635,930	2,285,520	2,426,029	2,318,700	2,356,087	2,873,948	2,778,990	2,659,427	2,486,340	2,625,625	29,895,810
Total 1936	1,367,658	1,357,548	1,610,884	1,689,750	1,853,397	1,802,520	1,784,778	1,859,907	1,890,400	1,982,109	1,896,750	2,037,861	21,133,562
Total 1935	949,747	862,176	1,029,603	1,047,038	1,091,634	1,062,030	1,079,952	1,054,279	1,093,530	1,169,568	1,255,680	1,297,567	12,992,796

Miscellaneous pools not listed, and their total production in 1937, are: Albercas, 23,539 bbls.; Alworth, 93 bbls.; Barbacoas, 3,142 bbls.; Burnett, 385 bbls.; Carolina-Texas, 1,562 bbls.; Charco-Redondo, 4,384 bbls.; Colorado, 11,508 bbls.; Henne-Winch-Farriss, 1,181 bbls.; Hords Creek, 11,917 bbls.; Ignacio, 13,017 bbls.; Laurel, 7,272 bbls.; Loma Alta, 21,707 bbls.; Loma Vista, 2,614 bbls.; Los Olmos, 22,127 bbls.; Mercedes, 22,262 bbls.; Mirando Valley, 8,262 bbls.; Piedra Pintas, 6,443 bbls.; Roma, 355 bbls.; S.R.C., 24,521 bbls.; South Hoffman, 1,220 bbls.; Thomas-Lockhart, 14,005 bbls.; total, 201,516 bbls.

by Moss & Heard No. 1 Ricaby, from sand at 1,308-20 feet for a production of 20 bbls. per day pumping.

The discovery of the Ezzell field, McMullen County, was made in May with the completion of Erwin M. Jones No. 4 Ezzell, about 5 miles southwest of Simmons City, sections 20 and 23 of the Ezzell ranch. Production was obtained by perforating the casing at 1,523-33 feet. Initial production was 186 bbls. of 19.7 gravity oil per day through a quarter-inch choke. The acreage is controlled by independents who completed 40 producers during the remainder of the year, having a daily average production of 1,160 bbls. at the close of 1937.

The LaBlanca field, Hidalgo County was extended one and one half miles to the southeast by McCollum Exploration Co. No. 1-B Engleman. Perforations were made at 6,666-83 feet and it was completed for 48 bbls. per day through a one-half inch choke. This is believed to be one of the most important deep seated structures to be opened in the district. It is undefined in any direction.

Of the seven discoveries along the Balcone Fault line area, none was of major importance.

Summary of Drilling Operations

Field—	Comp.	Prod.	Dry	Gas
Agua Dulce	10	390	2	2
Alta Mesa	16	2,180	2	1
Alta Verde	7	20	5	0
Alta Vista	2	20	1	0
Alworth	6	0	4	0
Armagosa	1	0	0	1
Aviator	1	0	1	0
Baldwin	1	0	1	0
Barbacoas	3	0	3	0
Bateman	2	0	2	0
Batesville	1	4,000	0	0
Bentonville	9	125	5	3
Branyon-Luling	184	23,159	17	0
Buchanan	39	3,186	5	0
Burdett-Wells	8	314	3	0
Burnell	19	3,816	0	1
Byersville	3	16	1	0
Caesar	2	0	1	1
Callihan	2	15	0	0
Carolina-Texas	1	0	0	1
Carroll	1	20	0	0
Chapman-Abbott	1	0	1	0
Chapman Ranch	6	550	4	0
Charamousca	19	1,270	5	0
Charco-Rodondo	1	0	1	0
Chicon Lake	1	1	0	0
Clara Driscoll	19	2,501	4	0
Cole-Bruni	32	1,860	13	3
Colmena	34	2,170	7	8
Colorado	1	0	1	0
Cooksey	1	0	1	0
Crowther	2	10	1	0
Cuellar	7	0	4	3
Cuevitas	3	665	0	0
Dale	6	134	1	0
Darst Creek	44	6,025	9	0
Darst Creek Extension	9	2,950	1	0
Dirks	1	0	1	0
Dougherty-Hicks	1	30	0	0
Driscoll	8	1,010	0	0
Dunlap	11	520	4	0
East Premont	1	948	0	0
El Mesquite	1	0	1	0
El Tanque	7	420	1	1
Escobas	152	5,045	26	1
Ezzell	50	8,251	2	5
Flour Bluff	86	12,449	2	1
Foley	2	150	1	0
Fort Merrill	1	0	1	0
Government Wells	30	1,740	6	3
Hanthon-Nelson	1	255	0	0
Haynes	68	2,370	16	1
Henne-Winch-Farriss	2	0	2	0
Hoffman	76	5,653	8	2
Hords Creek	2	0	2	0
Ina	3	40	0	0
Jacob	25	374	9	0
Joliet	3	5	2	0
Killam	62	4,098	4	4
Kingsville	7	25	6	0
Kohler	22	985	7	4
Labbe	20	1,628	2	4
La Blanca	9	450	3	0
Lamar	2	0	1	1
Larremore	3	186	0	0
Las Albercas	1	0	1	0
Las Mestanas	1	0	1	0
La Sal Vieja	2	0	2	0
Las Animas	2	0	0	2
Loma Alto	1	0	1	0
Loma Novia	92	15,217	14	3
Loma Vista	2	0	2	0
London	7	440	3	2
Lone Oak	1	0	1	0
Lopena	5	0	2	3
Lopez	106	28,730	7	9
Los Olmos	7	5	6	0
Lost Mule	1	75	0	0
Luby	15	2,472	0	0
Lucas	1	0	0	1
Lundell	13	1,532	2	0
Lytton Springs	1	0	1	0
Macdonna	1	2	0	0
Manda	1	35	0	0
Manford	5	40	3	0
Martinez	1	0	1	0
McCampbell	97	14,711	4	1
McCrory	1	1,000	0	0
Mercedes	2	0	1	1
Midway	9	1,399	0	0
Miranda City	1	0	0	1
Noak	6	750	3	0
Nolte	2	0	2	0
Normanna	1	27	0	0
North Dale	4	60	1	0
North Jacob	2	5	1	0
North Pettus	14	1,617	1	0
North Sweden	113	16,600	1	4
Oakville	6	70	4	0
O'Hern	81	20,215	5	0
Oilton	80	10,060	15	4
Palangana	2	0	2	0
Pearsall	6	1,700	0	0
Peters	6	10	4	0
Pettus	1	0	1	0
Piedra Lumbre	27	2,670	1	1
Plummer	10	820	1	0
Plymouth	35	5,050	5	0
Premont	43	3,180	10	4
Randado	3	0	3	0
Ray	1	0	1	0
Rhode	3	0	1	2
Ricaby	18	763	11	2
Richard King	1	0	0	1
Rio Grande City	4	0	4	0
Roma	1	5	0	0
Sal Mar	1	20	0	0
Salt Flat	19	1,747	0	0
Samfordyce	26	2,510	5	2
Sandia	11	170	8	0
Sarnosa	12	695	5	0
Saxet	323	44,624	23	12
Saxet Heights	45	4,900	4	0
Seven Sisters	87	27,105	9	3
Slick	5	275	3	0
So. Callaham	2	80	0	0
So. Clara Driscoll	2	576	0	0
So. Hoffman	1	0	1	0
Stratton	3	185	0	0
Strauch	7	375	5	0
Sullivan	3	180	0	0
Sweden	10	604	2	1
Taft	41	5,779	1	0
Taylor	4	10	2	0
Thomas-Lockhart	9	196	4	0
Von Ormy	14	49	3	0
West Tuleta	4	90	0	0
White Point	2	120	1	0
Yoast	1	20	0	0
Zoboroski	14	1,060	2	0
Miscellaneous	435	130	426	6
Total	3,088	322,789	846	113

Completions by Months

Month—	Comp	Prod.	Dry	Gas
January	283	45,090	63	14
February	181	24,020	47	10
March	315	38,005	82	15
April	224	31,325	70	10
May	321	35,135	85	15
June	242	19,035	77	9
July	253	26,335	75	7
August	313	23,233	98	3
September	260	21,755	72	6
October	306	25,648	86	11
November	233	20,719	54	9
December	156	12,489	37	70
Total, 1937	3,087	322,789	846	116
Total, 1936	2,851	652,945	568	98
Difference	236	330,156	278	28

SOUTHWEST TEXAS (Continued)
(San Antonio District)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Tl. 1937 (bbls.)
BRANYON:													
Daily average	588	801	1,095	1,374	3,956	3,457	2,118	3,434	2,173	2,145	1,873	2,533	
Month	18,228	22,428	33,945	41,220	122,636	103,710	65,658	75,454	65,190	66,495	56,190	78,535	749,689
BUCHANON:													
Daily average	37	38	36	33	86	128	294	294	341	392	321	534	
Month	1,147	1,064	1,116	990	2,666	3,840	9,114	9,114	10,230	12,152	9,630	16,560	77,623
BYERSVILLE:													
Daily average	278	262	262	274	300	310	211	175	174	124	84	145	
Month	8,618	7,336	8,122	8,220	9,300	9,300	6,541	5,425	5,220	3,844	2,520	4,495	78,941
CHAPMAN:													
Daily average	328	328	336	353	295	400	301	282	218	300	209	293	
Month	10,168	9,184	10,416	10,590	9,145	12,000	9,331	8,742	6,540	9,300	6,270	9,080	110,766
DALE:													
Daily average	176	164	152	150	152	133	121	114	156	123	133	128	
Month	5,456	4,592	4,712	4,500	4,712	3,990	3,751	3,534	4,680	3,813	3,990	3,960	51,690
DARST CREEK:													
Daily average	7,697	7,741	7,659	7,390	8,217	7,935	7,090	7,163	7,482	7,441	7,162	7,746	
Month	238,607	216,748	237,429	221,700	254,727	238,050	219,790	222,053	224,460	230,671	214,860	240,135	2,759,230
DOBROWOLSKI:													
Daily average	190	206	190	190	195	180	174	156	146	179	157	176	
Month	5,890	5,768	5,890	5,700	6,045	5,400	5,394	4,836	4,380	5,549	4,710	5,460	65,022
HILBIG:													
Daily average	585	585	585	585	605	606	609	621	548	476	411	500	
Month	18,135	16,380	18,135	17,550	18,755	18,180	18,879	19,251	16,440	14,756	12,330	15,505	204,296
LULING:													
Daily average	5,810	5,810	5,810	5,800	5,925	6,107	6,396	6,518	6,553	6,538	7,021	6,620	
Month	100,110	162,680	180,110	174,000	183,675	183,210	198,276	202,058	196,590	202,678	210,630	205,230	2,279,247
LYTTON SPRINGS:													
Daily average	344	353	366	357	340	350	325	311	334	315	324	310	
Month	10,664	9,884	11,346	10,710	10,850	10,200	10,075	9,641	10,020	9,765	9,720	9,610	122,485
MINERVA:													
Daily average	196	162	198	198	221	210	213	186	183	191	188	191	
Month	6,076	4,536	6,138	5,940	6,851	6,300	6,603	5,766	5,490	5,921	5,640	5,935	71,196
OGDEN:													
Daily average	183	178	187	178	158	153	180	181	169	143	140	130	
Month	5,673	4,984	5,797	5,340	4,898	4,590	5,580	5,611	5,070	4,433	4,200	4,030	60,206
PEARSALL:													
Daily average	826	390	692	800	844	705	748	722	697	705	515	622	
Month	25,606	10,920	21,452	24,000	26,164	21,150	23,188	22,382	20,910	21,855	15,450	19,279	252,356
SALT FLAT:													
Daily average	4,239	4,238	4,091	4,078	4,573	4,250	4,664	4,794	4,568	4,329	4,267	4,602	
Month	131,409	118,664	126,821	122,340	141,763	127,500	144,584	148,614	137,040	134,199	128,010	142,665	1,603,609
SOMERSET:													
Daily average	650	650	650	650	648	715	645	638	540	615	613	631	
Month	20,150	18,200	20,150	19,500	20,088	21,450	19,995	19,778	16,200	19,065	18,390	19,575	232,541
VON ORMY:													
Daily average	126	119	120	128	130	131	148	144	139	142	143	145	
Month	3,906	3,332	3,720	3,840	4,030	3,930	4,588	4,464	4,170	4,402	4,290	4,495	49,167
ZOBOROSKI:													
Daily average	195	200	208	236	226	280	238	260	236	198	172	375	
Month	6,045	5,600	6,448	7,080	7,006	8,400	7,378	8,060	7,080	6,138	5,160	11,615	86,010
Daily average	22,966	22,675	23,045	23,198	27,300	26,539	24,986	25,572	25,157	24,994	24,600	26,488	24,810
Total month	711,946	634,900	714,395	695,940	846,300	796,170	774,566	792,919	754,710	774,814	738,000	821,130	9,055,790
Total 1936	713,434	657,227	721,091	705,240	746,263	726,030	746,666	753,503	686,550	708,969	694,170	691,624	8,550,767
Total 1935	709,962	648,564	728,469	714,750	717,866	709,410	719,789	725,741	685,290	699,267	693,000	697,066	8,449,174

Miscellaneous pools not listed, and their total production in 1937, are: Alta Vista, 1,553 bbls.; Batesville, 9,841 bbls.; Burdette, 8,500 bbls.; Carroll, 26,641 bbls.; Cedar Creek, 18,905 bbls.; Chicon Lake, 6,964 bbls.; Dunlap, 19,918 bbls.; Gas Ridge, 1,974 bbls.; Joliet, 1,544 bbls.; Kimbro, 457 bbls.; Larremore, 24,111 bbls.; Lone Oak, 365 bbls.; Manda, 2,002 bbls.; Manford, 9,759 bbls.; Medina, 6,758 bbls.; Nash Creek, 10,041 bbls.; Nolte, 796 bbls.; Thrall, 17,242 bbls.; Yost, 14,594 bbls.; Yturria, 19,751 bbls. Total 199,916 bbls.

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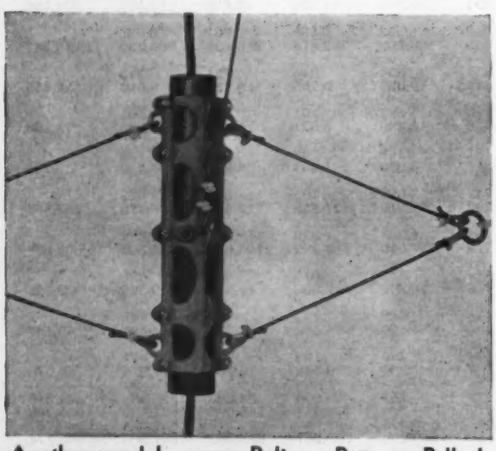

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Annual Review

FIVE FIELDS OPENED IN CALIFORNIA, TWO OF FIRST IMPORTANCE

By L. P. STOCKMAN

Producing, refining and marketing activities in California during 1937 were characterized by an aggressive drilling program, an abnormally large demand for crude oil and extremely heavy offshore shipments of crude and refined oil to foreign ports, principally the Orient. Shipments of California petroleum from Pacific Coast territory were higher in 1937 than at any time since 1930 when the annual offshore movement averaged 222,817 bbls. per day.

Two fields of primary importance, Rio Bravo and Canal, in Kern County, and three fields of secondary importance, East Round Mountain, North Mount Poso and Hilldon area in the northwest end of Long Beach, were discovered during the year. Substantial additions were made in the North Belridge, El Segundo, Wilmington, Santa Maria Valley, Ten Section, Greeley and Ventura Avenue fields. Deep zone exploration resulted in the discovery of a new deep zone of Miocene age in the Rosecrans field and extension to the eighth Callender zone in the Dominguez field.

In the extreme western end of the Montebello field the St. Helens Petroleum Co. found the Miocene productive early in January, 1938 at 6,353 feet. Importance of Barnsdall Oil Co. discovery in the Newhall field of Los Angeles Basin has not yet been determined although the wildcat is producing approximately 150 bbls. of 34.3 gravity oil per day. Barnsdall Oil Co. indicated the existence of a new oil field in the Newhall area on February 10, 1937 when No. 1 Rancho San Francisco in section 26-3-17 was completed flowing 125 bbls. of clean 58.1 gravity oil and 6,000,000 feet of natural gas daily from 6,276 feet, but when production failed to hold up satisfactorily drilling operations were resumed and the hole carried down to 6,472 feet. Upon recompletion at the new depth the well was returned to production flowing 400 bbls. of clean 34.2 gravity oil and 750,000 feet of natural gas per day through a 40/64-inch bean on March 22, 1937. A second test was started on this acreage but did not reach the pay before the close of the year. Conservative estimates indicate that the new fields discovered and additions to proved fields during 1937 have a minimum ultimate production of 150,000,000 bbls.

World's Deepest Producer

The most important discovery during the year was made by Union Oil Co. when No. 1-34 Kern County land in the Rio Bravo area of Kern County, about 3 miles northwest of the Greeley field, was completed flowing 3,000 bbls. of clean 38.1 gravity oil and 4,250,000 feet of natural gas per day through a 13/64-inch bean from a prolific oil sand of unusually high porosity and permeability at 11,302 feet. Production since completion of the well, located in section 34-28-25, has been restricted to 2,550 bbls. per day by use of a 23/64-inch

CALIFORNIA FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Rosecrans-Miocene Horizon	Los Angeles		Barnsdall Oil Co.	Mar. 16	7	Miocene	7,534	3,000
Pyramid Hills (Round Mountain)	Kern		Eastmont Oil Co.	May 1	7	Vedder	1,895	1,250
North Mount Poso	Kern		Ring Oil Co.	June 3	20	Vedder	1,750	6,000
Long Beach Extension-Hilldon	Los Angeles		Hilldon Oil Co.	July 29	5	Pliocene	4,038	1,400
Rio Bravo	Kern		Union Oil Co.	Nov. 4	1	Vedder	11,302	6,000
Canal	Kern		Ohio Oil Co.	Nov. 21	1	Upper Miocene	8,175	2,500

CALIFORNIA CRUDE OIL PRODUCTION—JANUARY-DECEMBER, 1937, INCLUSIVE

(Barrels of 42 U. S. gallons)

Northern fields—	January	February	March	April	May	June	July	August	September	October	November	December	Ttl. 1937
Belridge—North	468,737	417,100	467,207	446,058	469,460	463,551	466,733	488,498	488,865	516,090	500,204	507,408	5,699,911
Belridge—South	58,702	51,666	62,823	51,984	51,232	51,875	50,350	52,155	59,688	55,137	44,773	47,275	637,660
Canal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17,100	14,012	31,112
Coalinga	501,679	421,112	462,460	460,206	508,886	473,758	499,720	519,074	484,739	490,286	470,647	481,151	5,773,718
Edison	154,793	136,581	146,834	134,703	132,133	129,827	134,909	127,154	121,630	122,225	118,431	118,854	1,578,074
Elk Hills	263,062	247,180	289,336	321,568	344,604	324,123	329,718	325,646	332,082	339,879	330,038	338,706	3,785,942
Fruitvale	263,024	249,880	273,506	269,049	292,875	292,610	282,366	275,700	272,614	264,591	240,705	275,280	3,252,200
Greeley	13,896	12,460	13,484	14,820	26,685	32,314	35,292	53,852	54,716	68,657	84,549	116,343	527,068
Kern River	466,736	426,623	472,780	460,726	492,858	459,631	498,873	492,713	468,164	476,823	448,399	391,313	5,555,639
Kettleman Middle dome	6,385	5,161	5,702	5,041	4,622	3,836	3,558	3,316	3,094	3,137	2,884	2,759	49,495
Kettleman North dome	2,401,573	2,173,144	2,388,481	2,358,090	2,512,131	2,422,270	2,466,567	2,431,127	2,414,986	2,517,040	2,450,654	2,550,804	29,086,867
Lost Hills	118,938	109,776	123,982	116,418	117,845	114,307	110,556	109,214	124,254	128,480	126,431	118,575	1,418,776
McKittrick	49,154	46,968	61,600	88,309	125,132	126,358	128,732	138,257	133,158	139,867	135,181	131,905	1,304,621
Midway-Sunset	2,038,611	1,900,035	2,143,931	2,172,167	2,329,030	2,255,848	2,292,547	2,317,585	2,232,065	2,277,420	2,223,436	2,309,407	26,492,082
Mountain View	665,957	591,497	629,571	631,768	597,748	566,588	570,769	540,925	550,900	535,122	480,654	474,455	6,835,954
Mount Poso	557,390	498,271	528,897	533,527	504,416	507,309	524,929	562,617	568,435	612,207	630,305	695,113	6,723,416
Rio Bravo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48,513	79,329	127,842
Round Mountain	366,260	320,152	347,776	364,374	355,578	365,875	395,169	417,658	413,860	470,133	485,723	555,024	4,857,582
Ten Section	31,467	32,555	47,758	72,304	77,774	82,065	85,269	95,514	97,909	93,957	102,337	113,553	932,462
Wheeler Ridge	10,089	9,334	10,448	10,247	10,368	9,906	10,087	9,917	9,541	9,677	9,385	9,641	118,640
Coastal fields—													
Capitan	56,909	45,208	63,942	68,302	75,410	73,089	82,630	89,468	88,224	90,475	91,175	93,062	917,894
Elwood	300,839	262,297	291,995	282,981	283,985	276,464	268,330	253,948	249,521	257,748	237,944	240,281	3,206,333
Rincon	65,277	70,240	74,461	79,439	85,401	78,354	87,033	100,711	97,537	111,581	112,690	95,883	1,058,607
San Miguelito	68,471	73,074	80,755	84,123	97,691	93,796	111,887	107,531	99,961	110,670	104,161	116,591	1,148,711
Santa Barbara	23,312	28,018	21,910	21,330	23,057	19,603	20,185	19,975	17,958	17,792	16,711	17,205	247,056
Santa Maria	147,749	154,278	186,669	217,802	324,258	349,132	410,517	447,409	384,580	426,686	413,920	445,005	3,908,005
Summerland	1,144	1,083	979	1,035	1,140	991	1,051	975	746	1,046	1,010	1,045	12,245
Ventura Avenue	1,050,427	934,966	1,035,065	1,057,142	1,087,921	1,040,912	1,076,700	1,078,948	1,048,080	1,075,890	1,092,973	1,109,645	12,688,649
Ventura-Newhall	153,619	135,231	142,561	148,567	154,753	156,895	154,117	164,539	153,522	158,329	155,428	155,000	1,832,561
Watsonville	1,860	1,680	1,860	1,800	1,860	1,800	1,860	1,860	1,800	1,860	1,800	1,860	21,900
Southern fields—													
Brea Olinda	253,304	225,912	248,403	254,529	270,412	258,316	209,257	189,037	184,190	190,685	184,426	188,294	2,656,765
Coyote—East	94,600	90,651	98,861	102,246	128,388	114,132	126,082	124,033	123,373	122,618	130,338	134,633	1,389,955
Coyote—West	236,867	208,295	230,522	241,847	272,649	243,324	225,114	221,033	214,941	218,737	286,227	286,564	2,886,120
Dominguez	757,519	689,684	761,219	716,284	765,295	760,562	872,059	902,011	899,834	908,196	885,856	922,250	9,840,769
El Segundo	66,025	55,730	122,751	166,372	172,635	179,038	272,304	348,653	380,645	676,370	573,159	628,804	3,642,486
Huntington Beach	1,082,930	1,019,889	1,137,439	1,135,882	1,145,111	1,127,894	1,115,750	1,105,329	1,081,438	1,124,527	1,080,553	1,131,903	13,288,645
Inglewood	397,627	375,338	415,058	425,904	497,521	477,261	486,493	488,405	479,440	500,234	483,108	495,070	5,521,459
Lawndale	2,601	2,542	3,031	2,891	2,679	2,445	2,553	2,407	2,308	2,763	2,669	2,773	31,662
Long Beach	1,926,323	1,742,705	1,899,821	1,839,300	1,876,239	1,832,697	1,848,137	1,796,677	1,778,523	1,791,436	1,735,988	1,802,464	21,870,310
Los Angeles-Salt Lake	25,052	23,303	25,439	22,938	24,410	22,264	20,037	17,537	16,974	17,798	17,161	15,531	284,444
Montebello	277,900	273,934	301,413	291,789	290,678	268,064	271,724	258,411	241,397	244,007	223,286	230,919	3,173,522
Playa Del Rey	319,553	290,384	297,127	275,693	287,760	261,068	258,562	246,106	235,423	241,454	232,088	241,335	3,186,553
Potrero	8,568	7,900	8,900	10,194	9,749	8,831	6,417	6,410	7,092	12,058	12,540	18,135	116,794
Richfield	227,620	217,339	246,650	251,170	256,464	270,504	277,127	273,558	263,569	279,463	282,725	302,901	3,149,090
Rosecrans	69,864	62,250	78,053	86,737	91,493	91,694	105,252	117,956	114,918	130,754	136,582	166,966	1,252,519
Santa Fe Springs	1,351,217	1,233,128	1,381,287	1,320,374	1,380,449	1,343,005	1,349,873	1,325,650	1,260,711	1,282,306	1,247,238	1,274,472	15,749,710
Seal Beach	294,592	260,746	277,960	279,861	300,981	280,765	287,995	294,722	278,867	291,981	279,933	286,781	3,415,184
Torrance	252,394	223,193	236,319	239,926	243,320	241,442	235,332	240,549	228,616	223,927	231,950	227,881	2,824,849
Whittier	28,128	26,460	28,998	28,026	28,433	27,537	27,754	27,965	27,377	27,542	27,228	29,419	334,867
Wilmington	52,906	130,480	251,774	650,207	1,231,959	1,329,958	1,477,539	1,663,343	1,763,333	1,869,260	1,828,421	1,931,982	14,181,162
Total	18,031,650	16,515,433	18,427,798	18,816,050	20,365,478	19,913,888	20,575,815	20,876,078	20,555,578	21,528,921	21,059,637	21,925,561	238,591,887
Daily average 1937	581,666	589,837	594,445	627,201	656,951	663,796	663,736	673,422	685,184	694,481	701,988	707,276	
Daily average 1936	680,097	587,428	565,839	572,671	576,643	581,509	574,500	578,215	579,170	578,775	582,077	583,835	
Daily average 1935	500,365	498,538	497,781	472,471	494,910	556,962	561,868	600,136	640,336	650,065	676,476	678,284	
Daily average 1934	456,886	449,778	474,531	482,426	486,152	515,556	517,878	493,279	468,427	466,251	477,846	478,800	
Daily average 1933	466,461	468,109	432,741	475,431	477,988	478,155	488,414	501,188	489,129	473,065	464,452	475,022	
Daily average 1932	501,037	504,030	502,449	517,481	502,443	470,632	471,856	478,708	478,371	471,860	471,413	470,807	
Daily average 1931	531,798	533,248	527,898	526,785	530,612	521,381	519,139	505,451	506,020	504,903	499,923	501,967	
Daily average 1930	709,137	745,916	635,483	625,625	614,337	600,693	606,517	605,499	599,477	588,518	603,648	573,765	

TOTAL FLUID STOCKS OF PETROLEUM HELD IN PACIFIC COAST TERRITORY
(Barrels)

	Heavy crude and fuel	Diesel and gas oil	Refinable crude	Natural gasoline	Gasoline	Naphtha distillates	All other stocks	Total all stocks
1936—								
December 31	65,487,937	8,958,060	33,770,339	1,828,636	12,384,540	1,387,940	7,526,284	131,343,736
1937—								
January 31	64,887,039	6,578,002	33,363,124	1,990,607	13,297,082	1,176,618	7,011,626	128,304,098
February 28	63,772,198	6,594,150	33,332,972	2,156,764	14,205,074	1,206,135	6,574,990	127,842,283
March 31	62,108,041	6,190,186	32,979,428	2,311,580	14,346,131	1,300,303	6,348,447	125,584,116
April 30	61,371,826	6,162,471	33,261,772	2,387,318	13,581,194	1,379,513	6,478,803	124,622,897
May 31	61,683,955	5,923,708	33,370,816	2,569,706	13,499,045	1,472,504	6,510,515	125,030,249
June 30	61,930,713	6,086,715	33,085,270	2,686,697	12,642,248	1,792,315	6,495,953	124,719,911
July 31	62,379,641	6,613,164	32,456,637	2,705,516	11,324,676	1,772,583	5,986,122	123,238,339
August 31	62,430,828	6,479,092	31,185,125	2,639,774	10,489,889	1,945,097	6,054,279	121,224,084
September 30	63,199,156	6,909,395	30,642,228	2,210,146	10,930,937	1,946,166	5,935,837	121,773,865
October 31	64,502,327	7,266,217	30,261,980	2,041,658	11,561,625	1,692,231	6,045,366	123,371,404
November 30	65,376,608	7,438,542	30,078,424	2,023,555	11,868,246	1,536,420	5,967,523	124,289,318

bean. This is the deepest commercial producer in California and is believed to be the deepest commercial producer in the world.

Extension Work

The Texas Co. extended the productive limits of the North Beiridge field 3,000 feet northwestward on October 18, by completing No. 1 Martin in section 22-27-20, flowing 2,615 bbls. of very clean 32.6 gravity oil and 6,000,000 feet of natural gas per day through a 48/64-inch bean from the Wagonwheel zone of Eocene age at 8,446 feet. This outpost was finished with 613 feet of 5-inch liner including 285 feet of perforated landed on bottom and cemented through perforations at 8,158 feet. Completion of No. 1 Martin has stimulated drilling in the northwest end of the field with Tide Water Associated Oil Co., Beiridge Oil Co., Richfield Oil Corp., and the Texas Co. participating. The well increased the ultimate production of the field about 5,000,000 bbls. from the Wagonwheel zone. The Temblor was barren.

Union Oil Co. extended the Santa Maria Valley field twice. In May, Union Oil Co. completed No. 1 O'Donnell in section 21-10-34 pumping 479 bbls. of 17.8 gravity oil per day from 4,147 feet after finishing the hole with 346 feet of 6⅝-inch liner including 322 feet of perforated landed at 4,137 feet and in doing so moved the productive limits approximately two miles westward. In November, 1937, Union Oil Co. completed No. 2 LeRoy located about four miles west of No. 1 O'Donnell pumping 195 bbls. of 16.9 gravity oil per day from 5,230 feet after the hole had been carried down to 5,334 feet and then plugged back because of bottom water. Large flowing wells were subsequently completed in both the O'Donnell and LeRoy areas. A minimum of 2,500 acres is at present considered as commercially productive and it is believed that approximately 30,000,000 bbls. of crude oil have been added to the field's ultimate production. Union Oil Co. discoverer of the Santa Maria Valley field, has more than 20,000 acres under lease there.

New Deep Zones

Barnsdall Oil Co. discovered a deep productive zone in the Rosecrans field of Los Angeles Basin on March 15 when No. 10 O'Dea was completed flowing 1,500 bbls. of clean 36.1 gravity oil and 4,000,000 feet of natural gas per day through a one-half inch bean. The well was drilled to 7,664 feet but was plugged back to 7,534 feet just previous to completion and the hole finished with 317 feet of 4¾-inch liner including 227 feet of perforated landed at 7,534 feet. Union Oil Co. confirmed this discovery on July 14, 1937 by completing No. 16 Rosecrans flowing 1,360 bbls. of clean 35.9 gravity oil and 1,250,000 feet of natural gas per day from 7,560 feet. The new O'Dea zone, which is located in rocks of Miocene age and should therefore prove rather productive, is apparently confined to acreage held by Barnsdall and Union.

PRODUCTION OF CRUDE BY MONTHS—CALIFORNIA OIL DISTRICTS
(In barrels of 42 U. S. gallons)

	1937		1936	
Month—	Total barrels	Daily average	Total barrels	Daily average
January	18,031,650	581,666	21,083,006	680,097
February	16,515,433	589,837	17,035,430	587,428
March	18,427,798	594,445	17,541,014	565,839
April	18,816,050	627,201	17,180,120	572,671
May	20,365,478	656,951	17,875,938	576,643
June	19,913,888	663,796	17,445,261	581,509
Ttl. first half	112,070,297	619,173	108,160,769	594,290
July	20,575,815	663,736	17,809,508	574,500
August	20,876,078	673,422	17,924,680	578,215
September	20,555,578	685,184	17,375,122	579,170
October	21,528,921	694,481	17,942,030	578,775
November	21,059,637	701,988	17,462,315	582,077
December	21,925,561	707,276	18,098,891	583,835
Ttl. last half	126,521,590	687,617	106,612,546	579,416
Ttl. year	238,591,887	653,675	214,773,315	586,812

Drilling Near Peak

Drilling operations in California in 1937 reached the highest level since 1930 and the consistent increase in development work and wildcat operations that has taken place since 1931 is expected to continue during 1938. Decreased drilling will characterize work in the Edison, Kern River, Midway-Sunset, Mountain View, and El Segundo fields but this will be more than offset by increased work in the North Beiridge, Canal, Greeley, Kettleman North Dome, Rio Bravo, Ten Section, Santa Maria, Dominguez, Montebello, Rosecrans, and Wilmington fields. At the beginning of 1938 tentative locations had been approved for a minimum of 500 new wells and on this basis it is believed that at least 1,200 new oil and gas wells will be completed in California this

STATEMENT OF CONDITION
of the
FROST NATIONAL BANK
To The Comptroller of Currency
AT THE CLOSE OF BUSINESS FRIDAY, DECEMBER 31, 1937

RESOURCES

Cash		$10,991,518.99
U. S. Government Obligations (all carried at par or less)		17,975,018.75
Investment Bonds and Municipal Obligations (all carried at par or less)		2,690,088.00
Stock in Federal Reserve Bank		63,000.00
Loans and Discounts		4,765,276.86
Interest Earned but not Collected		106,075.37
Building Account		1,013,820.11
Other Real Estate Owned		1.00
Customers Liability Account Acceptances		8,691.25
TOTAL		$37,613,490.33

LIABILITIES

Capital Stock		$ 1,200,000.00
Surplus		900,000.00
Undivided Profits		322,468.54
Reserved for Taxes, Interest, etc.		131,816.27
Interest and Discount Collected and not Earned		17,312.64
Amount Set Aside for Dividends not Declared		48,000.00
Acceptances Executed for Customers		8,691.25
Deposits: Commercial	$19,340,299.28	
Correspondent Banks	5,790,881.25	
Time	7,928,568.19	
Public Funds	1,925,452.91	34,985,201.63
TOTAL		$37,613,490.33

DIRECTORS

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T. C. FROST, Chairman of the Board
T. C. FROST JR., Vice-President
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FROST NATIONAL BANK
SAN ANTONIO
MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

year. During 1937 1,164 new oil and gas wells were completed in California, the largest number since 1924, the peak development year, when 1,238 new wells were listed as commercial producers.

Producing wells reached the highest total ever recorded as there were 13,463 oil and gas wells producing during December 1937. Of this total 64 were commercial gas wells in the Buena Vista Lake, Buttonwillow, Delano, McDonald Island, Rio Vista, Semi-Tropic, and Tracy gas fields, and 13,399 wells in the various oil fields of the state. The December record of 13,463 active producing wells is exclusive of 4,720 wells that are entirely shut in as a result of curtailment and 1,668 others that require reconditioning, or can not be operated economically on the basis of present prices.

CALIFORNIA FIELD OPERATIONS BY DISTRICTS, YEAR, 1937

	Oil wells comp.	Initial prod.	Dry and abd.
Northern—			
Belridge—North	14	45,040	...
Belridge—South	1	130	...
Canal	1	2,267	...
Coalinga	2	22	1
Edison	10	1,035	8
Elk Hills	6	987	1
Fruitvale	38	10,241	17
Greeley	10	22,245	3
Kern River	71	10,984	15
Kettleman Middle dome	...	...	1
Kettleman North dome	30	39,542	2
Lost Hills	21	3,291	4
McKittrick	9	665	5
Midway-Sunset	123	32,585	18
Mountain View	40	18,059	9
Mount Poso	53	13,053	19
Rio Bravo	1	2,550	...
Round Mountain	53	18,632	12
Ten Section	7	19,824	5
Wheeler Ridge	...	...	...
Total	490	241,152	120
Coastal—			
Capitan	7	1,985	1
Elwood	1	320	2
Rincon	7	5,019	...
San Miguelito	5	3,071	1
Santa Barbara	...	...	1
Santa Maria	64	56,564	11
Summerland	...	...	...
Ventura Avenue	20	12,415	...
Ventura-Newhall	20	3,273	10
Watsonville	...	...	...
Total	124	82,647	26
Southern—			
Brea Olinda	...	...	...
Coyote—East	9	1,904	4
Coyote—West	2	378	1
Dominguez	17	9,845	...
El Segundo	49	52,059	5
Huntington Beach	29	5,009	2
Inglewood	4	5,788	1
Lawndale	...	...	1
Long Beach	24	5,038	21
Los Angeles-Salt Lake	...	...	...
Montebello	7	1,357	3
Newport	...	...	2
Playa Del Rey	5	1,308	3
Potrero	1	176	...
Richfield	22	2,823	...
Rosecrans	6	3,282	1
Santa Fe Springs	3	596	3
Seal Beach	2	165	...
Torrance	18	2,235	1
Whittier	...	...	1
Wilmington	335	202,004	...
Miscellaneous	...	...	118
Total	533	293,967	167
Total all fields	1,147	617,766	313
Gas fields—			
Buena Vista Lake	...	...	...
Buttonwillow	...	...	...
Chowchilla	...	...	...
Delano	...	...	...
Dudley Ridge	...	...	1
Goleta	...	...	...
McDonald Island	2	Gas	...
Rio Vista	15	Gas	...
Semi-Tropic	...	...	...
Tracy	...	...	...
Total gas fields	17	Gas	1
Total state	1,164	617,766	314

Field Data

The Wilmington field headed the completion list during 1937 where development work resulted in 335 new oil wells which showed an aggregate initial daily production of 202,004 bbls. In the Midway-Sunset field of Kern County operators completed 123 new wells that added 32,585 bbls. of new production.

Kettleman North Dome Association discovered a new deep zone in rocks of Eocene age July 22, 1937, but the discovery well, No. 4-18-J in section 18-21-17 after being completed flowing 1,212 bbls. of 46.7 gravity oil and 19,500,000 feet of natural gas daily from 10,753 feet was only permitted to produce for a few days before drilling operations were resumed. This hole was afterwards carried down to 11,746 feet but was subsequently plugged back to 10,810 feet because of mechanical trouble in the bottom of the hole. At the end of the year Superior Oil Co. and Standard Oil Co. were drilling tests down to the Eocene and they should have their respective wells ready for production tests early in 1938.

Late in 1937, St. Helens Petroleum Co. proved up the existence of a new deep zone in rocks of Miocene age in the extreme western end of the Montebello field of Los Angeles Basin and it appears likely that Union Oil Co., Standard Oil Co. and others holding acreage in the immediate area will undertake additional exploratory work early in 1938. The new zone is highly productive but with only one well on production its areal extent is still problematical. The most important factor in connection with this discovery is the possibility that the zone may be thicker than expected and cover a larger area. The discovery well, No. 20 Monterey Land and Water, was drilled on a geological belief expounded by Fred Ziegler, chief geologist of St. Helens Petroleum Co., that an accumulation in the Miocene could be expected west of a recognized fault which bisected the western end of the structure. This cross fault did not exert any great affect on the overlying Pliocene production in as much as producing wells have been completed on both sides of it. A deep test of Standard Oil Co. on the apex of the Montebello structure and east of the cross fault found the upper and middle Miocene barren. No. 20 Monterey of St. Helens Petroleum Co. was completed January 2, 1938 flowing 1,990 bbls. of clean 39.8 gravity oil per day from 6,353 feet with the 8⅝ inch water string landed at 6,221 feet and 161 feet of 5-inch liner including 132 feet of perforated landed at 6,353 feet.

CALIFORNIA FIELD OPERATIONS BY MONTHS FOR YEAR 1937

Month—	Oil wells completed Number	Bbls. dly.	Dry and abd.
January	77	43,597	28
February	63	22,157	21
March	98	50,492	24
April	91	42,592	32
May	119	62,966	24
June	100	47,057	16
July	135	79,958	38
August	103	37,966	31
September	100	75,920	27
October	96	62,767	31
November	101	58,888	20
December	81	33,406	22
Total 1937	1,164	617,766	314
Total 1936	802	374,002	320
Total 1935	763	660,980	347
Total 1934	452	570,637	247
Total 1933	248	274,104	163

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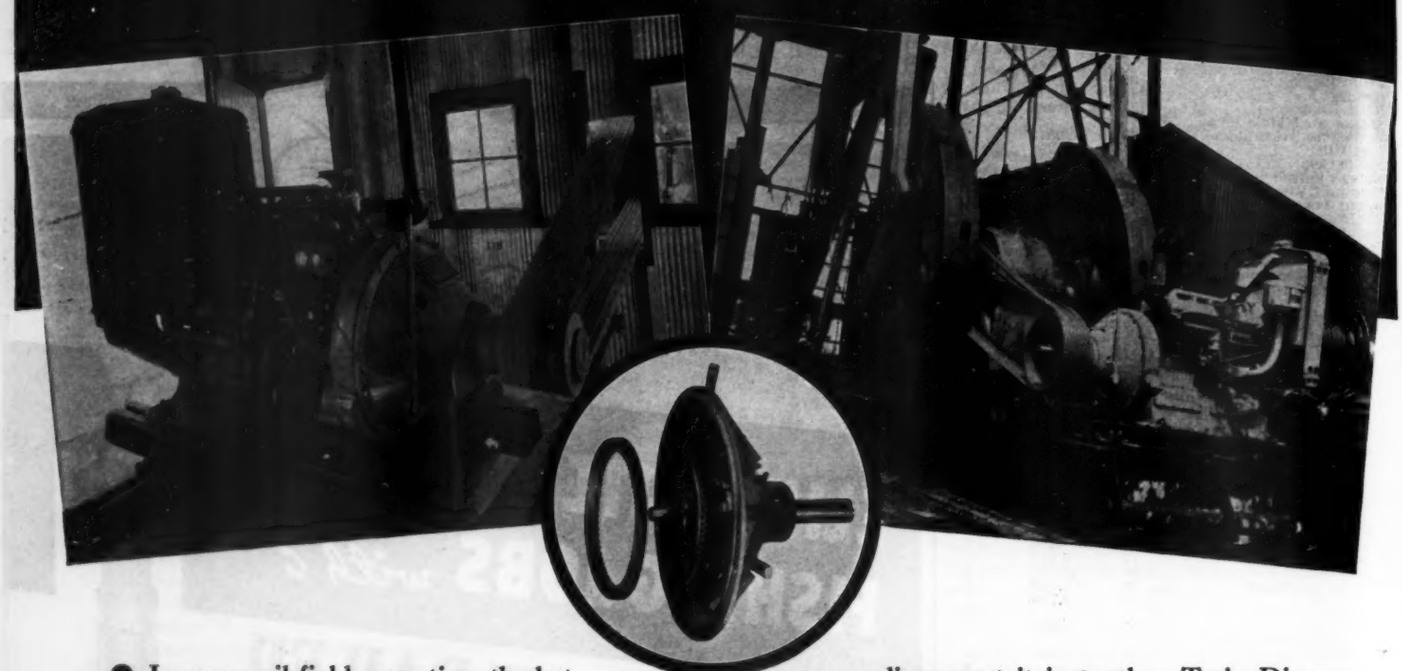

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Annual Review

13 POOLS OPENED IN FIRST YEAR OF NEW CAMPAIGN IN ILLINOIS

By STAFF CORRESPONDENT

In the first year of the revival of oil operations in Illinois 13 new pools were opened in the Central Coal Basin area, starting with a Benoist sand discovery in Marion County on January 27 and closing the calendar year with a McClosky sand pool in Richland County opened late in December.

The accompanying table of discoveries compiled by the Illinois Geological Survey, tells briefly the good results of wildcatting in the state in the past year.

The 117 dry holes completed in 25 counties show the other side of the picture but the failures will not affect the program in 1938, as many dry holes were anticipated in the first year during which much of the exploratory work was done before operators had been placed in possession of adequate subsurface information.

Much geological data was made known by careful coring of formations in nearly all of the wildcats, and the industry ended the year with a much better knowledge of underground conditions than it had when it started the first crop of test wells.

With 116 rigs up and wells drilling at the beginning of 1938 what is regarded as the critical year in Illinois' new oil history got off to a good start. Some of the largest oil companies in the United States invested heavily in millions of acres of Illinois leases in 1937 and 1936, and they will invest more to test what subsequent geophysical studies and core drilling have shown them to be most favorable portions of their respective holdings. It is generally regarded as true that this year's results will figure largest in the future of the Coal Basin area. The first year's work, taken as a whole, can be classed as successful. Thirteen pools in an absolutely wildcat territory in less than 12 months may be considered a triumph of scientific skill and practical judgment.

The first commercial oil of record in Illinois came in 1889. Before that time from 1865 to the time the first oil was discovered 30 tests had been drilled and only gas discovered in commercial quantity and it was not until 1905, or 40 years after the first test that Illinois stepped into the list of states of large oil production. Within that long period 112 tests had been drilled of which we have a record and natural gas figured most prominently in results as over 100 wells came in as gassers. In 1910 there was a time when production in Illinois exceeded 100,000 bbls. a day.

With that picture in mind it is impressive to find a wildcat campaign spread over 43 counties resulting in more than a dozen pools the first year, bringing to the surface a production of crude that rose at the close of the year to 25,000 bbls. a day from the years' crop of wells.

The largest and most important field opened last year was composed of those units in Clay and Noble counties known as the Clay City and Noble pools, which may yet become one big pool. They produce from the Cypress and McClosky formations, mainly the latter named pay, which lies around 2,950-3,050 feet in total depth, and which last year yielded on an average initial production of 600 bbls. per well, in many cases through tubing choke and not always a full 24-hours' flow. Wells of 2,000 bbls. initial production, and greater, were no rarity. The first well in the Clay City pool started at 2,642 bbls. a day and the opening well in the Richland pool was good for 1,996 bbls. the first day. Oil pools were opened in Marion, Clay, Wayne, Richland, Clinton and Fayette counties in the first year of the campaign.

While considerable leasing was done in the basin area Indiana in the past two years no large pool has yet been uncovered and outside of Vigo County, of which Terre Haute is the county seat, not much drilling has been done on the recently acquired acreage. The Carter Oil Co. pioneered in southern Vigo County and completed four wells that average 75 bbls. per day initially. A portion of Western Kentucky is also in the Coal Basin district, but remains a future field of operations for deep production.

Western Kentucky operators uncovered 14 pools last year in Ohio, McLean, Daviess and Hancock counties, but the only deep test completed in that area was a dry hole drilled by the South Penn Oil Co.

The fields of Ohio experienced a very busy year as the tables of completions will show, but no important wildcat strikes were reported.

ILLINOIS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Bond	5	0	4	1
Clay	99	46,299	14	0
Clinton	27	946	17	0
Clark	4	11	2	0
Crawford	13	110	3	0
Edwards	1	0	1	0
Fayette	5	0	5	0
Jasper	3	0	3	0
Lawrence	10	40	7	2
McDonough	11	39	1	0
Marion	121	7,892	26	0
Pike	1	0	1	0
St. Clair	2	5	1	0
Wabash	6	280	1	0
Wayne	17	1,385	9	0
Richland	51	23,270	7	0
Randolph	1	0	1	0
Effingham	4	0	4	0
Edgar	1	5	0	0
Perry	2	0	2	0
Washington	1	0	1	0
Hamilton	1	0	1	0
Mason	1	0	1	0
Christian	3	0	3	0
Shelby	1	0	1	0
White	1	0	1	0
Total 1937	392	80,282	117	3

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	1	52	0	0
February	6	168	0	1
March	9	243	4	1
April	15	301	7	0
May	15	2,894	4	1
June	22	3,461	5	0
July	17	4,986	2	0
August	34	14,921	9	0
September	72	15,337	18	0
October	62	14,110	16	0
November	61	11,928	19	0
December	78	11,881	33	0
Total 1937	392	80,282	117	3
Total 1936	35	1,288	8	0
Difference	356	78,994	109	3

CENTRAL AND SOUTHEAST OHIO

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Ashland	24	33	9	12
Ashtabula	5	0	3	2
Athens	81	55	32	35
Belmont	39	32	16	16
Carrol	14	12	7	2
Columbiana	26	8	14	9
Coshocton	17	559	6	2
Cuyahoga	7	16	1	5
Delaware	1	0	1	0
Fairfield	15	0	4	11
Gallia	1	0	0	1
Guernsey	82	0	38	44
Harrison	3	0	3	0
Hocking	20	225	6	6
Holmes	17	37	7	9
Huron	27	2	2	23
Jefferson	14	3	5	6
Knox	58	1,589	17	22
Lawrence	4	0	0	4
Licking	89	1,248	20	15

(Continued on Next Page)

ILLINOIS FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Patoka	Marion	21-4n-1e	Adams Oil & Gas Co.	Jan. 27	93	Benoist	1,418	52
Clay City	Clay	33-3n-8e	Pure Oil Co.	Feb. 26	78	Cypress	2,613	40
Clay City	Clay	33-3n-8e	Pure Oil Co.	May 15	..	McClosky	2,950	2,642
Clay City (S. E. Extension)	Wayne	26-1n-8e	Myers & Fitzpatrick	Sept. 10	..	McClosky	3,066	100
Cisne	Wayne	26-1n-7e	Pure Oil Co.	Mar. 7	2	Ste. Genevieve	2,987	100
Noble	Richland	8-3n-9e	Ohio Oil Co.	Aug. 2	45	McClosky	2,990	1,996
Noble (N. E. Extension)	Richland	34-4n-9e	Mammoth Oil Ref. Co.	Sept. 2	....	McClosky	3,009	1,501
Noble (Townsite)	Richland	16-3n-9e	Southern Ill. Pet. Co.	.....	....	McClosky	2,961	145
Rinard	Wayne	33-2n-7e	Benedum-Trees Oil Co.	Oct. 5	1	McClosky	3,154	500
Beecher City	Fayette	12-8n-3e	Carter Oil Co.	Dec. 20	2	Niagaran	3,100	57
Beecher City	Fayette	15-8n-3e	Carter Oil Co.	Dec. 31	..	Benoist	1,503	200
New Centralia	Clinton	2-1n-1w	Adams Oil & Gas Co.	Nov. 30	2	Benoist	1,384	156
Olney	Richland	18-3n-10e	Frost et al	Dec. 22	1	McClosky	3,084	50

KENTUCKY (WEST) FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
Hardin Heirs—East Tract	Ohio-McLean	1½ mi. E. Livermore	.....	January	51	Jett	....	75-500
Markwell	McLean	1½ mi. W. Island	.....	September	4	Jett	....	240-500
Nannie Cook	McLean	1½ mi. N. Cleopatra	.....	September	1	Barlow	....	25
Hollis Howell	McLean	½ mi. S. Livermore	.....	August	3	Jett	....	50-100
John Ditto	McLean	1 mi. S.W. Maxwell	.....	September	2	Stray	....	25-50
C. W. Howard	Daviess	¼ mi. N. Utica	.....	October	2	Jett	....	40-75
Dode Taylor	Daviess	1¼ mi. N. Pleasant Ridge	.....	May	5	Jackson-Barlow	....	10-70
Harvey McDaniel	Hancock	1¼ mi. S. Troy, Ind.	.....	December	1	Jackson	....	10
Donnie Boling	Hancock	1¼ mi. S. Patesville	.....	November	1	Jett	....	5
American Falls	Hancock	¼ mi. W. Eaton	.....	March	27	Jackson	....	5-50
Ellen A. House	Hancock	3 mi. E. Pellville	.....	July	10	Jett	....	5-75
Brown Brothers	Hancock	¼ mi. S. Victoria School	.....	August	2	Barlow	....	8-10
Alton Mason	Hancock	1 mi. E. Easton	.....	June	2	Barlow	....	10-20
Marshall Lloyd	Ohio	½ mi. E. Narrows	.....	July	3	Jackson-Barlow	....	5-10

Field—	Comp.	Prod.	Dry	Gas
Lorain	31	0	12	19
Medina	63	209	24	9
Mahoning	3	1	1	1
Meigs	95	8	34	57
Monroe	41	33	9	18
Morgan	42	23	11	18
Muskingum	38	937	13	6
Noble	36	10	14	16
Perry	52	688	16	20
Portage	2	0	2	0
Richland	2	0	2	0
Scioto	4	0	2	2
Stark	48	0	7	41
Summit	16	0	5	11
Trumbull	2	0	2	0
Tuscarawas	21	0	10	11
Vinton	12	15	2	6
Washington	105	139	45	24
Wayne	13	0	10	3
Total 1937	1,170	5,882	412	486

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	76	188	27	36
February	79	407	30	38
March	77	211	25	41
April	90	214	34	35
May	92	559	30	39
June	87	455	35	37
July	133	766	38	57
August	100	935	30	45
September	113	272	47	40
October	117	859	44	43
November	99	531	36	42
December	107	485	36	33
Total 1937	1,170	5,882	412	486
Total 1936	378	1,323	94	239
Difference	792	4,559	318	247

KENTUCKY

Summary of Wells Completed

	Comp.	Prod.	Dry	Gas
Breckenridge	19	0	10	9
Daviess	50	450	26	8
Estill	24	112	0	0
Elliott	2	5	1	0
Floyd	51	85	2	44
Henderson	9	85	1	0
Martin	33	78	4	23
McLewn	64	3,009	21	4
Ohio	201	2,444	87	23
McLean-Ohio	20	2,225	1	2
Pike	7	0	0	7
Powell	22	114	3	0
Wayne	1	25	0	0
Grayson	2	0	0	2
Webster	5	23	0	1
Lee	107	3,736	16	0
Hancock	129	1,723	48	25
Johnson	9	3	3	5
Knott	38	0	1	37
Lawrence	8	27	0	1
Magoffin	18	72	3	0
Carter	1	0	0	1
Butler	5	65	2	0
Wolfe	3	12	1	0
Metcalf	1	0	0	1
Muhlenberg	1	0	1	0
Hopkins	1	0	1	0
Crittenden	1	0	1	0
Union	1	20	1	0
Total 1937	834	14,313	234	193

Completions by Months

	Comp.	Prod.	Dry	Gas
January	19	600	6	0
February	6	335	1	0
March	9	360	1	0
April	17	670	5	2
May	69	1,224	10	13
June	103	2,572	18	37
July	81	1,519	24	14
August	145	1,545	49	35
September	99	1,168	39	11
October	125	2,023	40	31
November	94	1,715	23	35
December	67	582	18	25
Total 1937	834	14,313	234	193
Total 1936	326	16,758	96	10
Difference	508	2,445	138	183

LIMA OHIO FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Allen	1	12	0	0
Auglaize	2	0	2	0
Fulton	1	0	1	0
Hancock	11	96	3	0
Hardin	3	35	1	1
Henry	6	76	1	0
Mercer	2	15	1	0
Ottawa	2	0	0	2
Putman	16	788	0	0
Sandusky	4	7	2	0
Seneca	18	226	4	7
Shelby	2	0	1	1
Wood	2	0	2	0
Wyandot	5	28	2	0
Total 1937	75	1,283	20	11

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	9	100	1	3
February	4	7	1	0
March	10	54	2	4
April	4	12	1	1
May	6	2	3	1
June	8	74	3	1
July	7	352	1	0
August	1	0	1	0
September	5	134	0	0
October	11	136	6	0
November	5	305	0	1
December	5	107	1	0
Total 1937	75	1,283	20	11
Total 1936	81	476	9	37
Difference	6	807	11	26

INDIANA

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Daviess	13	0	9	4
Dearborn	1	0	0	1
Gibson	13	9	6	5
Hamilton	1	0	0	1
Harrison	2	0	1	1
Huntington	1	0	1	0
Jay	1	10	0	0
Knox	10	0	4	6
Perry	10	38	3	0
Pike	24	95	6	8
Posey	2	0	2	0
Rush	3	0	1	2
Spencer	13	45	7	1
Sullivan	9	24	2	2
Vigo	10	240	3	1
Vandenburgh	14	79	5	0
Warrick	1	0	1	0
Wabash	1	0	0	1
Martin	5	10	3	1
Decatur	3	0	0	3
Randolph	1	4	0	0
DuBois	2	0	2	0
Delaware	1	0	0	1
Greene	1	0	1	0
Wells	1	0	1	0
Hancock	1	0	0	1
Total 1937	144	554	58	39

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	17	27	10	2
February	7	45	3	2
March	3	0	2	1
April	13	20	7	2
May	8	25	3	2
June	10	35	6	0
July	15	115	2	6
August	7	101	1	1
September	17	76	8	2
October	17	10	7	8
November	24	95	7	10
December	6	5	2	3
Total 1937	144	554	58	39
Total 1936	196	1,067	92	59
Difference	52	513	34	20

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Annual Review

FIVE NEW FIELDS AND RECORD CRUDE PRODUCTION IN MICHIGAN

By
O. C. PRESSPRICH

SAGINAW, Mich.—Greater development in 1938 loomed in the Michigan oil industry as 1937 passed into history with new oil records established.

Oil production topped the previous record set in 1935; gas production staged a comeback to forge ahead of 1936 yield, and capital investment in the oil and gas industry mounted near the $100,000,000 mark. Only one record failed to fall in 1937—that of breaking the single month's mark of 1,742,030 bbls. of oil production established in October 1935. October 1937 approached within 4,000 bbls. of the high month of 1935 when the Crystal field yielded three-quarters of a million barrels. The Buckeye, most prolific of all Michigan fields, yielded 720,000 bbls. in October to approach the 1935 monthly record.

New Pools in Three Counties

Five new fields were added to oil production in 1937. Two fields, Sherman in Isabella County and Salem in Allegan County, were profitable additions. One field, the Geneva pool in Midland County, failed to live up to its early promises. The Secord and Bentley fields in Gladwin County, both new additions as 1937 ended, gave promise of becoming good neighbors of Buckeye.

The Geneva-Midland field ranked as practically a complete failure, listing only three producers as the year ended, while Buckeye Township of Gladwin County provided the spectacular by becoming the best yet discovered in Michigan. It ended the year with 340 oil wells having a daily potential of 150,000 bbls. curbed under proration to a daily output of less than 30,000 bbls. The Buckeye success overshadowed every other oil development in Michigan in 1937. With only a half-dozen producers located in the so-called South Buckeye, or Oard pool as 1937 dawned, the field developed rapidly. The field was discovered in July 1936, and by the end of that year had a half-dozen wells none of which rated more than 200 bbls. a day. Then in January 1937 came the discovery in north Buckeye or Wicklund pool about two miles away from the south pool. After acid treatment the discovery well yielded more than 1,400 bbls. daily, which was the signal for a rush of operators to both the north and south pools.

Pure Opens Sherman

Another January discovery in 1937 was the Sherman field in Isabella County, a development almost exclusively in the hands of the Pure Oil Co. The Sherman field grew from a small discovery well in January to a cluster of 52 producers at the end of the year with a daily production of nearly 7,000 bbls.

The Salem-Allegan field, second of the 1937 crop of pools that proved up, was discovered in March. It is far to the south of the nearest production in the Muskegon field, both bordering Lake Michigan, while other oil fields apparently center in central Michigan. By the end of the year the Salem-Allegan field had grown to 49 wells, and a daily output of 3,600 bbls.

In midsummer the Adams pool in Arenac County was discovered last year, but as 1937 ended development was slow, with only three wells yielding a daily combined average of about 150 bbls. Exploration for gas in the Adams-Arenac field resulted in the discovery of promising oil production in the Traverse limestone, the same stratum from which Allegan's Salem field produces. The Clayton field, also in Arenac County, discovered in November 1936, made conservative progress in 1937, ending the year with 37 producing wells and as many more drilling.

Gladwin's New Pools

October brought the first producer in Bentley Township of Gladwin County, and November recorded the first producer in the Secord region in the same county. Both discoveries were followed by extensive exploration of pay sands in the vicinity and for several weeks as 1938 began the Bentley and Secord regions continued to hold interest as the latest hot spots in Michigan's future oil development. Development of the two newest fields is pushed to substantiate the theory that pay sands extend parallel to the northwest-southeast line of development experienced in the prolific Buckeye field—nearest proved area to Bentley and Secord. Bentley now has four producers, and Secord has two, with drills on the way to the pay stratum in scattered locations in both sectors.

Development continued in the West Branch and Ogemaw areas of Ogemaw County with year-end reports showing 212 wells in these two districts producing a combined daily average of about 2,400 bbls.

Oil production figures by months for 1937 and the two preceding years compare as follows:

	1935 bbls.	1936 bbls.	1937 bbls.
January	1,037,000	1,249,000	903,000
February	1,034,000	1,059,000	886,000
March	1,119,000	1,115,000	1,220,000
April	1,201,000	1,026,000	1,346,000
May	1,256,000	1,060,000	1,310,000
June	1,281,000	1,015,000	1,270,000
July	1,366,000	986,000	1,365,000
August	1,438,000	941,000	1,606,000
September	1,485,000	875,000	1,602,000
October	1,742,000	909,000	1,738,000
November	1,462,000	838,000	1,572,000
December	1,379,000	883,000	1,593,000
Totals	15,800,000	11,954,000	16,411,000

Belief that the Secord-Sheridan area of Gladwin County, 10 miles or so northeast of the Buckeye field, holds possibilities of becoming Michigan's next big oil field, is credited with the spirited competitive bidding between major companies at the State Conservation Department's auction of mineral leases on state-owned lands. The auction brought the highest acre price yet realized by the state.

MICHIGAN FIELDS DISCOVERED DURING 1937

Field—	County	Location	Discovery well	Date of completion 1937	No. of wells Dec. 31, 1937	Producing formation	Total depth (feet)	Initial potential cap. (bbls.)
North Buckeye	Gladwin	18-1n-1e	.....	Jan. 6	214	Dundee	3,600	....
South Buckeye	Gladwin	18-17n-1e	.....	July 18, 1936	117	Dundee	3,600	....
Salem	Allegan	16-4n-13w	Lentz & Miller	Mar. 2	50	Traverse	900	35
Adams	Arenac	36-Adams Twp.	Stanley G. Russell	July 8	3	Traverse	....	....

MICHIGAN

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Allegan	62	24,627	10	0
Arenac	63	12,591	13	9
Clare	5	0	3	2
Gladwin	363	233,946	29	1
Isabella	88	23,941	26	4
Mecosta	14	0	8	6
Midland	39	4,600	8	1
Monroe	6	156	5	0
Montcalm	49	862	28	13
Muskegon	20	0	3	17
Ogemaw	66	6,827	9	0
Saginaw	8	59	5	0
Gratiot	24	155	10	13
Miscellaneous	125	42	120	3
Total 1937	932	307,806	277	69

Completions by Months

	Comp.	Prod.	Dry	Gas
January	46	5,768	23	6
February	51	9,664	20	11
March	92	28,940	30	20
April	82	28,908	36	1
May	90	41,615	18	9
June	84	53,037	13	1
July	87	35,105	24	4
August	79	21,180	17	7
September	85	20,051	26	3
October	106	34,742	31	2
November	69	16,295	23	3
December	61	12,501	16	2
Total 1937	932	307,806	277	69
Total 1936	795	63,840	245	212
Difference	137	243,966	32	143

Decline of Crystal

A minor few wells were brought in during the year in the Porter, Greendale, Vernon and Crystal fields. Production was maintained in all except Crystal, which continued its steady decline from its once spectacular place as the state's top producer. At the year's end Crystal had only 75 wells in production with a combined daily yield of approximately 900 bbls.

Kansas Wildcats in 1937

The following table shows the results of wildcat drilling in Kansas by counties in 1937, with average depth of producers and dry holes:

County—	Oil and gas wells	Dry holes	Avg. depth of dry holes
Barber	3 (1 gas)	3	5,235
Barton	11	27	3,322
Butler	3	7	2,836
Cowley	4	22	3,131
Chase	0	3	2,625
Chautauqa	4 (1 gas)	7	2,191
Decatur	0	1	4,149
Edwards	0	3	4,929
Ellis	6	23	3,667
Ellsworth	0	6	3,284
Elk	1	4	2,005
Finney	0	1	5,556
Ford	0	1	5,907
Grant	6 (all gas)	0	0
Greenwood	4	9	1,533
Hamilton	0	1	6,453
Harper	0	2	5,063
Haskell	0	1	2,800
Harvey	0	7	3,604
Kearny	1 (gas)	1	1,468
Kingman	0	2	4,553
Kiowa	0	1	5,075
Lane	0	1	5,121
Logan	0	2	4,688
Lyon	1	2	2,136
Marion	0	2	3,270
McPherson	1	7	3,398
Mitchell	0	1	4,053
Ness	1	0	0
Osborne	0	3	3,973
Pawnee	0	5	4,037
Pratt	1	3	4,365
Reno	1	17	3,945
Rice	10 (1 gas)	17	3,400
Rooks	1	12	3,698
Rush	4 (3 gas)	6	3,843
Russell	5	13	3,436
Saline	0	2	3,470
Scott	0	1	5,035
Sedgwick	2 (1 gas)	11	3,767
Seward	1 (gas)	0	0
Sheridan	0	1	4,663
Stafford	5	17	3,949
Stevens	1 (gas)	0	0
Sumner	3	9	3,961
Trego	1	8	4,507
Wallace	0	1	5,270
Woodson	3	14	1,610
Total	84	287	
Average depth of oil and gas wells, feet			3,068
Average depth of dry holes, feet			3,426
Percentage of oil wells			18.3
Percentage of gas wells			4.3
Percentage of dry holes			77.4

Crude Oil Price Changes During 1937

OKLAHOMA, KANSAS* AND SALT CREEK, WYOMING

Gravity—	Jan. 1	Jan. 28—Schedule No. 1	Jan. 28—Schedule No. 2
Below 25	$ .86	....	$ 98
25-25.9	.88	....	1 00
26-26.9	.90	....	1 02
27-27.9	.92	....	1 04
28-28.9	.94	....	1.06
Below 29	.94	$1 06	....
29-29.9	.96	1.08	1 08
30-30.9	.98	1.10	1 10
31-31.9	1 00	1.12	1.12
32-32.9	1 02	1.14	1 14
33-33.9	1.04	1.16	1.16
34-34.9	1.06	1.18	1.18
35-35.9	1.08	1 20	1.20
36-36.9	1.10	1 22	1.22
37-37.9	1.12	1.24	1 24
38-38.9	1.14	1.26	1 26
39-39.9	1 16	1 28	1 28
40 and over	1.18	1 30	1.30

Schedule No. 1 posted by Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Boy, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.

Schedule No. 2 posted by Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.

*Effective August 1, 1937, Stanolind's posting in Otis-Albert pools of Rush-Barton counties, Kansas, reduced 13 cents.

ALTUS AND TIPTON, OKLAHOMA

	Jan. 1	Jan. 28
Altus and Tipton	$1.08	$1.20

Posted by Gulf Oil Co.

NORTH LOUISIANA AND ARKANSAS

Gravity —	Jan. 1	Jan. 28
Below 25	$ .78	$ 90
25-25.9	.80	.92
26-26.9	.82	.94
27-27.9	.84	.96
28-28.9	.86	.98
29-29.9	.88	1.00
30-30.9	.90	1.02
31-31.9	.92	1.04
32-32.9	.94	1.06
33-33.9	.96	1.08
34-34.9	.98	1.10
35-35.9	1.00	1.12
36-36.9	1.02	1.14
37-37.9	1.04	1.16
38-38.9	1.06	1.18
39-39.9	1.08	1.20
40 and over	1.10	1.22

Posted by all purchasers.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark.:	Jan. 1	Jan.28	Dec. 13
All grades	$ 75	$ 90	$ 90
Tullos and Urania	.97	1 02	1 02
El Dorado East field	.75	90	.90
Union County, Ark.	.75	90	.90
Ouachita Co., Ark.	.75	90	.90
Lisbon, La.*	1 10		.98

*Posted by Caddo Crude Oil Purchasing Co.

WEST TEXAS, EXCEPT PECOS COUNTY, AND LEA COUNTY, NEW MEXICO

Gravity—	Jan. 1	Jan. 28
25-25.9	....	$ 78
26-26.9	....	.80
27-27.9	....	.82
28-28.9	....	.84
Below 29	$ 75	....
29-29.9	.76	.86
30-30.9	.78	.88
31-31.9	.80	.90
32-32.9	.82	.92
33-33.9	.84	.94
34-34.9	.86	.96
35-35.9	.88	.98
36-36.9	.90	1.00
37-37.9	.90	1.02
38-38.9	.90	1.04
39-39.9	.90	1.06
40 and over	.90	1.08

Posted by all purchasers, except that of Sinclair Prairie Oil Marketing Co. which began purchasing in Ward and Winkler counties, Texas, and in Lea County, New Mexico, on April 20, 1937. Sinclair Prairie's schedule is identical to the above except it posts $1 a barrel for 36-gravity and above.

WEST TEXAS

	Jan. 1	Jan. 28
Pecos County*	$ 85	$ 91
Pecos shallow†	.75	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

CARSON AND HUTCHINSON COUNTIES, TEXAS

Gravity—	Jan. 1	Jan. 28
Below 35	$ .81	$ 91
35-35.9	.83	.93
36-36.9	.85	.95
37-37.9	.87	.97
38-38.9	.89	.99
39-39.9	.91	1.01
40 and over	.93	1.03

Posted by all purchasers.

GRAY COUNTY, TEXAS

Gravity—	Jan. 1	Jan. 28
Below 35	$ 86	$ 96
35-35.9	.88	.98
36-36.9	.90	1.00
37-37.9	.92	1.02
38-38.9	.94	1.04
39-39.9	.96	1.06
40 and over	.98	1.08

Posted by all purchasers.

PENNSYLVANIA GRADE OIL

	Jan. 1	Feb. 24	June 7	Sept. 1	Oct. 12	Nov. 19	Dec. 1
Posted by Tide Water Pipe Co.:							
Bradford, Pa.	$2 57	$2 67	$2.82	$2.60	$2.35	$2.35	$2.20
Alleghany, N. Y.	2 57	2 67	2.82	2.60	2.35	2.35	2.20
Posted by South Penn Oil Co.:							
Pennsylvania Grade oil in National Transit lines (Bradford field)	2 57	2 67	2.82	2.60	2.35	2.35	2.20
Pennsylvania Grade oil in Southwest Pennsylvania lines	2 32	2.42	2.57	2.30	2.05	2 05	1.88
Pennsylvania Grade oil in Eureka Pipe Line lines	2 27	2 37	2 52	2 25	2.00	2.00	1.82
Pennsylvania Grade oil in Buckeye Pipe Line lines	2 12	2 22	2.37	2.10	1.85	1.85	1.70
Corning Grade Oil in Buckeye Pipe Line Co. lines	1.32	1.42	1.42	1.27	1.27	1.27	1.27
Posted by Pennzoil Co.:							
Pennsylvania Grade oil in National Transit lines:							
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	2 57	2.67	2.82	2.60	2.35	2.30	2.15
Group B (Includes Titusville district.)	2 56	2 66	2.81	2.59	2.34	2.29	2.14
Group C (Includes Turkey and Tidioute districts.)	2 55	2 65	2 80	2.58	2.30	2.28	2.13
Group D (Includes Bear Creek and Porkey districts.)	2 54	2 64	2.79	2.57	2.29	2.27	2.12
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacy and Kinzua districts. Price depends on length of pipe line to plant at Oil City.)	2 51	2 61	2.76	2.55	2.26	2.25	2.10
Posted by Pure Oil Co.:							
Cabin Creek, W. Va.	2 27	2 37	2.52	2.25	2.00	2.00	1.82
Bradford Hollow, W. Va.	2 27	2 37	2.52	2.25	2.00	2.00	1.82
Kelly Creek, W. Va.	2.27	2 37	2.52	2.25	2.00	2.00	1.82

CALIFORNIA CRUDE OIL PRICE CHANGES IN 1937

Gravity—	Richfield Jan. 1	Santa Fe Springs Jan. 1	Montebello Jan. 1	Athens, Rosecrans Jan. 1	Mountain View Jan. 1	Elwood Terrace Jan. 1	Belridge‡ Jan. 1	El Segundo— Jan. 1	El Segundo— Oct. 15
14-14.9	$.76	...	$.77	...	...	...	$.70	...	$.80
15-15.9	.76	...	.77	...	...	...	.70	...	.80
16-16.9	.76	...	.77	...	...	...	.70	...	.80
17-17.9	.76	...	.77	...	...	...	.70	...	.80
18-18.9	.76	...	.77	...	...	...	.70	...	.80
19-19.9	.76	...	.77	...	$.70	...	.74	...	.82
20-20.9	.78	...	.77	...	.70	...	.78	...	.85
21-21.9	.80	$.78	.77	...	.73	...	.82	...	.88
22-22.9	.84	.78	.79	...	.77	...	.86	...	.92
23-23.9	.88	.78	.82	$.84	.80	...	.90	...	.95
24-24.9	.91	.82	.85	.88	.84	...	.94	...	.99
25-25.9	.95	.86	.89	.93	.88	...	.98	...	1.03
26-26.9	.98	.90	.92	.98	.91	...	1.02	...	1.06
27-27.9	1.02	.95	.96	1.03	.95	F.O.B.	1.06	...	1.10
28-28.9	1.06	.99	.99	1.07	.99	ship	1.10	...	1.14
29-29.9	1.09	1.03	1.03	1.12	1.02	...	1.14	...	1.17
30-30.9	...	1.08	1.07	1.17	1.06	...	1.18	...	1.21
31-31.9	...	1.12	1.11	1.22	1.09	...	1.20	...	...
32-32.9	...	1.16	1.14	1.27	1.13	...	1.22	...	...
33-33.9	...	1.20	1.18	1.32	1.17	$1.28	1.24	...	...
34-34.9	...	1.25	1.22	1.37	1.20	1.32	1.26	...	...
35-35.9	...	1.29	1.25	1.42	...	1.35	1.28	...	...
36-36.9	...	1.33	1.29	1.46	...	1.39	1.30	...	...
37-37.9	...	1.37	1.32	1.51	...	1.43	1.32	...	...
38-38.9	...	1.42	1.36	1.56	...	...	...	...	...
39-39.9	...	...	1.40	1.61	...	...	...	...	...
40-40.9	...	...	1.43	1.66	...	...	...	...	...

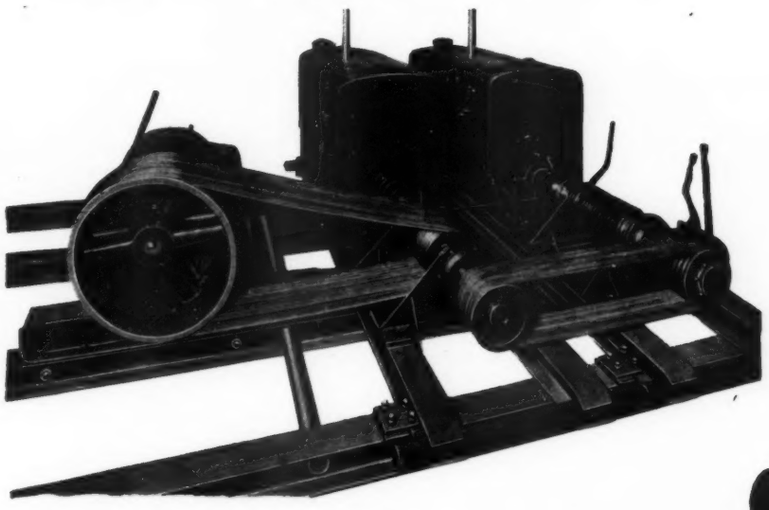
Gravity—	West Coyote Hills Jan. 1	Buena Vista Hills, Midway-Sunset, Lakeview, area, Elk Hills Jan. 1	Lost Hills† Jan. 1	Alamitos Heights Jan. 1	Whittier, La Habra Jan. 1	Rincon* Jan. 1	Dominguez Jan. 1	Wheeler Ridge Jan. 1	Coalinga Jan. 1
14-14.9	$.78	$.70	$.70	$.74	$.76	...	...	...	$.70
15-15.9	.78	.70	.70	.74	.76	...	...	...	.70
16-16.9	.78	.70	.70	.74	.76	...	...	...	.70
17-17.9	.78	.70	.70	.74	.76	...	...	...	.70
18-18.9	.78	.70	.70	.74	.76	...	...	...	.70
19-19.9	.78	.74	.74	.74	.78	...	...	$.70	.71
20-20.9	.80	.78	.78	.74	.82	...	...	.70	.72
21-21.9	.84	.82	.82	.74	.85	...	...	.70	.74
22-22.9	.88	.87	.86	.74	.89	$.69	...	.72	.78
23-23.9	.92	.92	.90	.77	.93	.71	$.79	.76	.82
24-24.9	.96	.97	.94	.80	.96	.73	.81	.79	.86
25-25.9	1.00	1.01	.98	.82	...	.75	.83	.83	.90
26-26.9	1.03	1.06	1.02	.85	...	.77	.86	...	...
27-27.9	1.06	1.10	1.06	.88	...	.79	.88	...	...
28-28.9	1.10	1.15	1.10	.90	...	.81	.90	...	...
29-29.9	1.14	1.20	1.14	.93	...	.83	.93	...	...
30-30.9	1.17	1.25	1.18	.95	...	.85	.95	...	...
31-31.9	1.21	1.29	...	...	...	...	.97	...	...
32-32.9	1.25	1.34	...	...	...	...	1.00	...	...
33-33.9	1.28	1.38	...	...	...	...	...	...	...
34-34.9	1.32	...	...	...	...	...	...	...	...

Gravity—	Torrance Jan. 1	Seal Beach Jan. 1	Huntington Beach Jan. 1	Inglewood Jan. 1	Signal Hill Jan. 1	Santa Paula‡ Jan. 1	Orcutt‡ Jan. 1	Wilmington— Jan. 1	Wilmington— Oct. 15
14-14.9	$.80	$.79	$.78	$.79	$.80	$.70	...	...	$.75
15-15.9	.80	.79	.78	.79	.80	.70	...	...	.75
16-16.9	.80	.79	.78	.79	.80	.70	.70	...	.75
17-17.9	.80	.79	.78	.81	.80	.71	.70	...	.77
18-18.9	.82	.79	.78	.84	.80	.73	.72	...	.79
19-19.9	.85	.79	.82	.87	.82	.75	.74	...	.82
20-20.9	.88	.79	.85	.90	.85	.77	.77	...	.85
21-21.9	.91	.79	.89	.93	.88	.79	.80	...	.88
22-22.9	.93	.82	.92	.96	.92	.82	.83	...	.92
23-23.9	.96	.86	.96	.99	.95	.85	.86	...	.95
24-24.9	.99	.91	1.00	1.02	.99	.87	.88	...	.99
25-25.9	1.02	.95	1.03	1.05	1.03	.90	.91	...	1.03
26-26.9	1.05	1.00	1.07	1.09	1.06	.92	.93	...	1.06
27-27.9	...	1.05	1.11	1.12	1.10	.95	...	...	1.10
28-28.9	...	1.10	1.14	1.15	1.14	.97	...	...	1.14
29-29.9	...	1.15	1.18	1.18	1.17	.99	...	...	1.17
30-30.9	...	1.19	1.22	1.21	1.21	1.01	...	...	1.21
31-31.9	...	...	...	1.24	...	...	...	...	...
32-32.9	...	...	...	1.27	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	...	...

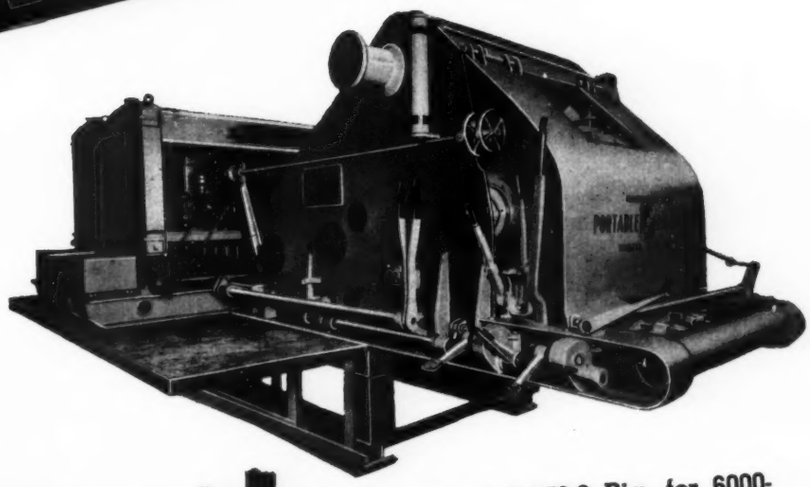
*Posted by General Petroleum Corp. of California. †Union Oil Co.'s Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Lost Hills schedule stops at $1.32 for 37 degrees and over. ‡Posted by Union Oil Co. Effective December 22, 1937, Standard Oil Co. of California posted the following price schedule in the Greeley and Canal fields: 84 cents for 27 gravity to $1.64 for 48 gravity and above. Newhall, McKittrick, Kern River, Kern Front and Round Mountain unchanged at flat price of 70 cents. Kettleman Hills, Olinda, Brea Canyon, Ventura Avenue and Playa Del Rey also unchanged.

Portable Rigs

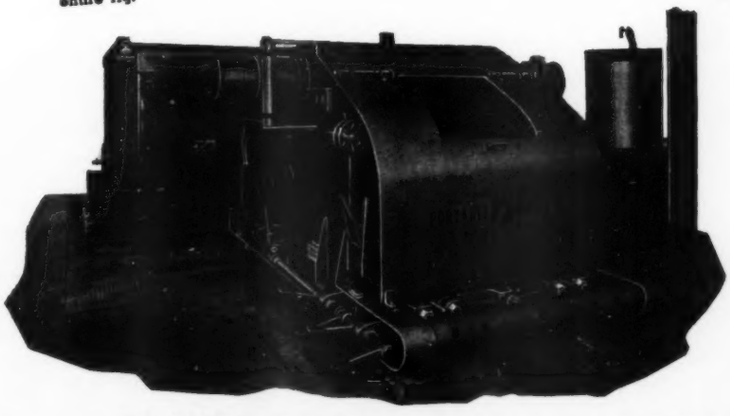
FOR 3000, 4000, AND 6000-FT. DRILLING



LEFT: Model 1437 Rig, capable of drilling to 3000-foot depths, has been designed to meet the needs of the industry in the conversion of conventional type draw works to the use of internal combustion engine power. For efficient, yet quiet operation all drives are V-belt. The wide variety of power units available, plus detailed specifications on this rig, gladly furnished upon request.



RIGHT: Model R-810-S Rig, for 4000-foot drilling, has three speeds forward and two speeds reverse on drum and rotary shafts and sand reel (optional); self-energizing brakes with double compound leverage, conventional type standard, water cooled type optional; dual engine drive (gasoline, natural gas or Diesel fuel engines) can be compounded into draw works or pumps; friction clutches on drum and rotary shafts; force feed lubrication to all chains, bearings, sprockets and shafts; substructure provides walkway around entire rig.



LEFT: Model R-876-8 Rig, for 6000-foot drilling, consists of draw works, Dual Engine Compounding Drive, 2 engines of suitable size, and substructures. Note all controls readily accessible to driller. Has 8 speeds forward and 6 reverse on drum. Rotary shaft, and sand reel if specified (reel optional). Dual Drive (gasoline, natural gas, or Diesel fuel engines) can be compounded into draw works or pumps. Air controlled engine clutches.

For full details on these rigs refer to Pages 1709-36, your 1938 Composite Catalog.

POWER

ECONOMY

Photo by Anton Brueh

In Manila Oil Field Cordage
QUALITY BEGINS with FIBER

For dependable, economical oil field service, Manila Rope of Plymouth quality and specialized construction will best answer the severe requirements of use. Many skills combine to produce and control the dependable quality of Plymouth Manila Oil Field Cordage. The first important step is the selection of fiber which is chosen particularly for its strength and toughness.

In spite of the care used in grading fiber where it is produced, our own experts examine and re-grade it here at Plymouth. Bales are opened, hanks are thoroughly shaken out and minutely examined for color, texture and extent of cleaning. Years of experience enable these men to select the grades best adapted for the purpose which will give to this type of cordage maximum strength and durability.

The same scrupulous attention of skilled men is brought to bear on every step in the manufacture of Plymouth Manila Oil Field Cordage, the durability and resistance to external wear for which these products are famous—

Plymouth Manila
Drilling Cables • Crackers
Bull Ropes • Cat Head Lines
Torpedo Line • Spinning Lines

PLYMOUTH CORDAGE COMPANY
NORTH PLYMOUTH, MASSACHUSETTS
Oil Well Supply Co., Distributors—Stores in All Fields

PLYMOUTH
The Rope you can Trust

MARION COUNTY, TEXAS

	Jan. 1	Jan. 28
Below 25	....	$ 90
25-25.9	....	.92
26-26.9	....	.94
27-27.9	....	.96
28-28.9	....	.98
29-29.9	....	1 00
30-30.9	....	1 02
31-31.9	....	1 04
32-32.9	....	1 06
33-33.9	....	1 08
34-34.9	....	1.10
35-35.9	....	1.12
36-36.9	....	1 14
37-37.9	....	1.16
38-38.9	....	1 18
39-39.9	....	1.20
40 and over	....	1.22

Posted by Magnolia Petroleum Co.

GULF COAST

Gravity—	Jan. 1	Jan. 28 Schedule No. 1	Jan. 28 Schedule No. 2
Below 18	....	$.90	....
18-18.9	....	.92	....
19-19.9	....	.94	....
Below 20	$ 92	....	....
20-20.9	94	.96	$ 95
21-21.9	96	.98	98
22-22.9	98	1 01	1 01
23-23.9	1 00	1 04	1 04
24-24.9	1.02	1 07	1 07
Below 25	....	....	....
25-25.9	1 04	1 10	1 10
26-26.9	1 06	1 13	1 13
27-27.9	1 08	1 15	1 15
28-28.9	1 10	1 17	1 17
Below 29	....	....	....
29-29.9	1 12	1 19	1 19
30-30.9	1 14	1 21	1 21
31-31.9	1 16	1 23	1 23
32-32.9	1 18	1 25	1 25
33-33.9	1 20	1 27	1 27
34-34.9	1 22	1 29	1 29
Below 35	....	....	....
35-35.9	1 22	....	1 31
36-36.9	1 22	....	1 33
37-37.9	1 22	....	1 35
38-38.9	1 22	....	1 37
39-39.9	1 22	....	1 39
40 and over	1.22	....	1.41

Schedule No. 1 posted by the Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity but continues its 2-cent spread up to 40 and over at $1.41)

Schedule No. 2 posted by Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co. and Sun Oil Co.

	Jan. 1	Jan. 28
Choctaw and Darrow, La.	....	....
	(see note below)	
Evangeline, La.	(see note below)	
Clay Creek, Tex.	....	$1 00
Garden Island, La.	....	1 37
Cleveland, Tex.	$1 10	1 27
Hardin, Tex.	1 03	1 15
Lafitte, La.	1 12	1 24
Livingston, Tex.	1 15	1 27
Welsh, La.	96	98
Tepetate	1 12	1 12

O'Connor-McFadden, Segno, Tom O'Connor and Plymouth take same gravity prices as Refugio, Greta, etc. Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree.

Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36.

Evangeline, La., effective Oct. 1, 1937, 92 cents for below 20 gravity with 2-cent differential up to 40 and over at $1.34. Posted by Stanolind Oil & Gas Co.

MIRANDO DISTRICT, TEXAS

	Jan. 1*	Jan. 28	July 6
20-20.9	....	$ 90	$ 96
21-21.9	....	.93	.98
22-22.9	....	96	1 00
23-23.9	....	99	1 02
24-24.9	....	1 02	1 04
25-25.9	....	1 05	1 06
26-26.9	....	1 08	1 08
27-27.9	....	1 10	1 10
28-28.9	....	1 12	1 12
29-29.9	....	1 14	1 14
30-30.9	....	1 16	1 16
31-31.9	....	1 18	1 18
32-32.9	....	1 20	1 20
33-33.9	....	1 22	1 22
34-34.9	....	1.24	1.24
35-35.9	....	1.26	1.26
36-36.9	....	1.28	1.28
37-37.9	....	1 30	1.30
38-38.9	....	1.32	1.32
39-39.9	....	1 34	1.34
40 and over	....	1.36	1 36

*Flat price of 90 cents for all grades. "Mirando crude" includes crudes purchased in Duval, Jim Hogg, Webb and Zapata counties, and in the Heyser and Placedo fields.

REFUGIO, GRETA, SAXET, and TAFT, TEX.

Gravity	Jan. 1*	Jan. 28	July 6
20-20.9	....	$ .95	$1 01
21-21.9	....	98	1 03
22-22.9	....	1 01	1 05
23-23.9	....	1 04	1 07
24-24.9	....	1 07	1 09
25-25.9	....	1 10	1 11
26-26.9	....	1 13	1 13
27-27.9	....	1 15	1 15
28-28.9	....	1 17	1 17
29-29.9	....	1 19	1 19
30-30.9	....	1 21	1 21
31-31.9	....	1 23	1 23
32-32.9	....	1 25	1 25
33-33.9	....	1 27	1 27
34-34.9	....	1.29	1 29
35-35.9	....	1 31	1 31
36-36.9	....	1 33	1 33
37-37.9	....	1 35	1 35
38-38.9	....	1 37	1 37
39-39.9	....	1 39	1 39
40 and over	....	1.41	1.41

*Flat price of 95 cents per bbl. Posted by Humble Oil & Refining Co.

WHITE CASTLE, LOUISIANA

	Jan. 1	Jan. 28
Below 18	....	....
18-18.9	....	....
19-19.9	....	$ .94
20-20.9	....	.96
21-21.9	....	.98
22-22.9	....	1 01
23-23.9	....	1 04
24-24.9	....	1 07
25-25.9	....	1 10
26-26.9	....	1 13
27-27.9	....	1.15
28-28.9	....	1.17
29-29.9	....	1.19
30-30.9	....	1.21
31-31.9	....	1.23
32-32.9	....	1 25
33-33.9	....	1 27
34-34.9	....	1 29

Posted by Shell Petroleum Corp.

IOWA DISTRICT, LA.

	Jan. 1	Jan. 28	Feb. 23
Below 18	....	....	$ 90
18-18.9	....	....	.92
19-19.9	....	$ .84	.94
Below 20	$ .82	....	....
20-20.9	.84	.86	.96
21-21.9	.86	.88	.98
22-22.9	.88	.91	1 01
23-23.9	.90	.94	1 04
24-24.9	.92	.97	1 07
25-25.9	.94	.99	1.10
26-26.9	.96	1 03	1 13
27-27.9	.98	1 05	1 15
28-28.9	1 00	1 07	1 17
29-29.9	1 02	1 09	1 19
30-30.9	1 04	1 11	1 21
31-31.9	1.06	1 13	1 23
32-32.9	1 08	1 15	1 25
33-33.9	1 10	1 17	1 27
34 and over	1 12	1.19	1 29

Posted by Shell Petroleum Corp.

CONROE, RACCOON BEND, TOMBALL, SATSUMA, TEXAS

	Jan. 1	Jan. 28
Below 29	....	$1 20
29-29.9	....	1 22
30-30.9	....	1 24
31-31.9	....	1 26
32-32.9	....	1 28
33-33.9	....	1 30
34-34.9	....	1 32
35-35.9	1 24	1 34
36-36.9	1 26	1 36
37-37.9	1 28	1 38
38-38.9	1 30	1 40
39-39.9	1 32	1 42
40 and over	1 34	1 44

Posted by Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. Raccoon Bend prices are for deep sand oil.

MIDDLE WESTERN STATES

OHIO OIL CO

	Jan. 1	Jan. 23	Mar. 16	July 1	July 22	July 23	Dec. 29
Lima	$1.15	$1.25	$1 25	$1.25	$1.25	$1.25	$1.25
Illinois	1 23	1 35	1 35	1.35	1.35	1.35	1.35
Princeton, Ind	1 23	1 35	1.35	1.35	1.35	1.35	1 35
Midland, Mich.*	1.32	1.42	1 42	1.42	1.42	1.27	1 27
W. Branch, Mich.	1 16	1.26	1 26	1.21	1.09	1 09	.80
Arenac, Mich.	....	1.26	1 26	1.21	1.09	1 09	.80
Buckeye, Mich.	....	....	1.395	1.395	1.395	1 245	1.245
Muskegon, Mich.	1 00	1.00	1.00	1.00	1.00	1.00	1 00
Eastern Kentucky:							
Big Sandy River	1 30	1.42	1 42	1.42	1.42	1 42	1 42
Kentucky River	1 38	1 50	1 50	1.50	1.50	1 50	1 50
Western Kentucky	1.28	1.40	1.40	1.40	1.40	1.40	1.40

*Posted by Pure Oil Co. and Simrall Corp. and includes Greendale, Porter, Beaverton and Crystal and equal grades. West Branch, Mich., and Arenac, by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Pure Oil Co. and Simrall Corp.

ROCKY MOUNTAIN STATES

	Jan. 1	Jan. 4	Jan. 28	Sept. 16	Oct. 25	Nov. 1	Nov. 16
Iles, Colo., light*	$1 06	$1 06	$1 18	$1 18	$1 18	$1 18	$1 18
Iles, Colo., heavy*	1.00	1 00	1 12	1 12	1 12	1 12	1 12
Greybull, Wyo.*	1.28	1 28	1 30	1 30	1 30	1 30	1 30
Torchlight, Wyo.*	1 28	1 28	1 30	1 30	1 30	1 30	1 30
Grass Creek, Wyo., light.†	1.18	1 18	1.30	1.30	1 30	1 30	1 30
Grass Creek, Wyo., heavy*†	.62	.62	.62	.62	.62	62	62
Hamilton dome, Wyo.*	.67	67	67	67	67	67	67
Elk Basin, Wyo., light*†	1.18	1 18	1 30	1 30	1 30	1 30	1 30
Frannie, Wyo., heavy*	.62	.62	.62	.62	.62	.62	.62
Frannie, Wyo., light*	.70	.70	70	70	70	70	70
Hogback, N. Mex.*	1.21	1 21	1 21	1 21	1 21	1 21	1 21
Pondera, Mont.*	1.05	1.05	1 05	1 05	1 05	1 05	1 05
Salt Creek, Wyo., Tensleep sd.§				70	.70	70	70
Big Muddy, Wyo.†	1.11	1 23	1 18	1.18	1 18	1 18	1 18
Rock Creek, Wyo.†	1.085	1.085	1.205	1 205	1 205	1 205	1 205
Lea County, N. Mex: (See West Texas gravity table.)							
Artesia, N. Mex.‡	.80	.97	92	.92	.92	92	.92
Maljamar, N. Mex.‡	.80	.80	92	92	.92	92	.92
Canon City and Florence, Colo.	.98	.98	1.10	1 10	1 10	1 10	1.10
Lance Creek, Wyo.	.85	.97	.97	97	97	.97	97
Sunburst, Mont.	1 20	1 20	1 20	1 20	1 05	1 05	90
Cat Creek, Mont.*†	1 28	1 40	1 40	1 40	1 10	1 10	1 10
Cut Bank, Mont.	1.35	1 35	1 35	1 35	1 20	1 05	90

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co. *†Posted by Northwest Refining Co. Other postings, effective Oct. 25, 1937, are on a gravity basis of $1.05 for below 35° and $1.30 for above 40°.

§Salt Creek (except Tensleep sand), Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.

ANAHUAC, DICKINSON, FLOUR BLUFF AND TURTLE BAY, TEXAS

	Jan. 1	Jan. 28
30-30.9	$1 04	$1 16
31-31.9	1 05	1 18
32-32.9	1 08	1 20
33-33.9	1 10	1 22
34-34.9	1 12	1 24
35-35.9	1 14	1 26
36-36.9	1 16	1 28
37-37.9	1 18	1 30
38-38.9	1 20	1 32
39-39.9	1 22	1 34
40 and over	1 24	1 36

Posted by Humble Oil & Refining Co.

RODESSA, LOUISIANA, AND TEXAS AND PANOLA COUNTY, TEXAS

	Jan. 1	Jan. 28
Below 25	....	$ 93
25-25.9	....	.95
26-26.9	....	.97
27-27.9	....	.99
28-28.9	....	1 01
29-29.9	....	1 03
30-30.9	....	1 05
31-31.9	....	1 07
32-32.9	....	1 09
33-33.9	....	1 11
34-34.9	....	1 13
35-35.9	....	1 15
36-36.9	....	1.17
37-37.9	....	1 19
38-38.9	....	1 21
39-39.9	....	1 23
40 and over	....	1 25

Posted by all purchasers.

TALCO

Gravity—	Jan. 1	Jan. 28
Talco field	$ 65	$ 73

Posted by Humble Oil & Refining Co.

EAST CENTRAL TEXAS (Mexia District)

Gravity—	Jan. 1	Jan. 28
Below 29	$ 91	$1.03
29-29.9	.93	1.05
30-30.9	.95	1.07
31-31.9	.97	1.09
32-32.9	.99	1.11
33-33.9	1.01	1.13
34-34.9	1 03	1.15
35-35.9	1 05	1.17
36-36.9	1.07	1.19
37-37.9	1.09	1.21
38-38.9	1.11	1.23
39-39.9	1.13	1 25
40 and over	1.15	1.27

Posted by Humble Oil & Refining Co. and Sinclair Crude Oil Purchasing Co.

ROANOKE AND NORTH CROWLEY, LA.

	Jan. 1	Dec. 28
Below 21	....	$ 90
21-21.9	....	.93
22-22.9	....	.96
23-23.9	....	.99
24-24.9	....	1 02
25-25.9	....	1.05
26-26.9	....	1.08
27-27.9	....	1 10
28-28.9	....	1.12
29-29.9	....	1 14
30-30.9	....	1 16
31-31.9	....	1 18
32-32.9	....	1 20
33-33.9	....	1 22
34-34.9	....	1 24
35-35.9	....	1 26
36-36.9	....	1 28
37-37.9	....	1 30
38-38.9	....	1 32
39-39.9	....	1 34
40 and over	....	1 36

EAST TEXAS

	Jan. 1	Jan. 8	May 22
East Texas	$1.15	$1.27	$1.35

All companies.

CAMP HILL, TEXAS

	Jan. 1	Jan. 28
Camp Hill	....	$1.27

CAYUGA, TEXAS

	Jan. 1	Jan. 28
Below 25	....	$ 88
25-25.9	....	.90
26-26.9	....	.92
27-27.9	....	.94
28-28.9	....	.96
29-29.9	....	.98
30-30.9	....	1 00
31-31.9	....	1.02
32-32.9	....	1 04
33-33.9	....	1 06
34-34.9	....	1.08

Posted by Tide Water Oil Co.

CASS COUNTY, TEXAS

	Jan. 1	Jan. 28
Cass County	....	$1.25

Posted by Texas Co.

VAN, TEXAS

	Jan. 1	Jan. 28
Van, Texas	$1.02	$1.10

Posted by Humble Oil & Refining Co. and Pure Oil Co.

CENTRAL AND NORTH TEXAS

Gravity—	Jan. 1	Jan. 28
Below 29	$ .84	$ 96
29-29.9	.86	.98
30-30.9	.88	1 00
31-31.9	.90	1.02
32-32.9	.92	1.04
33-33.9	.94	1.06
34-34.9	.96	1.08
35-35.9	.98	1.10
36-36.9	1.00	1.12
37-37.9	1.02	1.14
38-38.9	1 04	1.16
39-39.9	1 06	1 18
40 and over	1.08	1.20

Posted by all purchasers.

SOUTHWEST TEXAS

Gravity—	Jan. 1	Jan. 28
Pettus	$1.25	$1.37
Salt Flat	.97	1 09
Darst Creek	.97	1 09
Luling	.90	1.00
Lytton Springs	1 00	1 12
Hilbig	....	1.09
Clark	....	1.09
Carrol	....	1 09
Zoboroski	....	1.09

Posted by Humble Oil & Refining Co.

GOVERNMENT WELLS, TEXAS

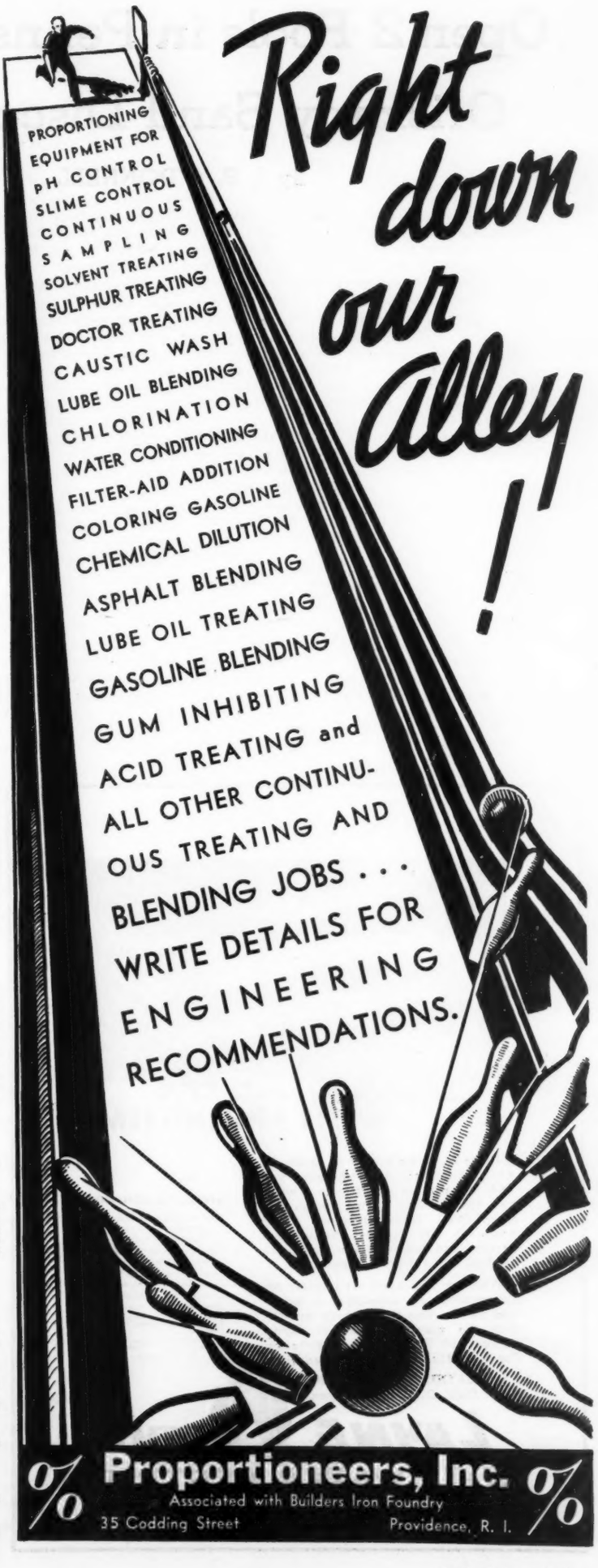
	Jan. 1	Jan. 28
Below 18	....	....
18-18.9	....	....
19-19.9	....	....
20-20.9	....	$ 90
21-21.9	....	.93
22-22.9	....	.96
23-23.9	....	.99
24-24.9	....	1.02

Posted by Sun Oil Co.

CANADIAN FIELDS

Ontario:*	Jan. 1	Sept. 1
Petrolia	$2.10	$2 10
Oil Springs	2 17	2.17
Turner Valley, Alberta Province:†		
Clear naphtha	2.60	2.36
Discolored naphtha, 65 gravity and higher	2.36	2 36
Discolored naphtha and crude oil, 40-40.9 gravity	1.55	1.36
Increasing 3 cents (2 cents effective September 1) for each degree of gravity with top price for 64-64.9 gravity	2.27	1 84

These prices delivered field tankage. *Imperial Oil Co., Ltd. †Imperial Oil Co., Ltd.



Open 2 Pools in Pennsylvania Oriskany Sand Discoveries

By J. P. O'DONNELL

The year 1937 was one of contrasts for the Pennsylvania Grade crude oil region. It opened with prospects of being the 12 best months in the history of secondary recovery production and concluded with those prospects transformed into the hard realities of overproduction and reduced prices.

During the first 11 months of 1937 more Pennsylvania Grade crude oil was produced than in all of 1936, demand for the same period of 1937 was within a few days of equaling the demand for all of 1936, average crude prices were the highest since 1929 but ended the year at a two-year low and drilling was the highest in many years, even exceeding 1929 totals.

Production of Pennsylvania crude in the first 11 months of 1937 totaled 27,305,000 bbls., according to the U. S. Bureau of Mines, against 27,072,000 bbls. for all of 1936. At the end of the year production of Pennsylvania Grade oil approximated 30,000,000 bbls. or almost 11 per cent above 1936. Comparative figures on total production for the past two years follow:

State—	1937 (11 months)	1936 (12 months)
New York	5,015,000	4,663,000
Pennsylvania	17,515,000	17,070,000
Southeast Ohio	1,256,000	1,492,000
West Virginia	3,519,000	3,847,000
Total	27,305,000	27,072,000

The outstanding production development of the past year in the Pennsylvania fields was the discovery of the Sliverville pool in the Bradford field. Niagara Oil Corp., drilling what was intended as a Third or Bradford sand well on its Sliverville lease, 9 miles south of Bradford, was the first to tap the new sand, lying between the Second and Third sands. Niagara's first well came in August 24 with an initial production of approximately 1,000 bbls. per day. It was the first flowing well in this field in 30 years.

On October 26 Minard Run Oil Co. drilled an offset well that found the same sand and on December 13 Niagara completed its second Sliverville well. Each of these had an initial production of about 1,000 bbls. per day. Three other tests on these and adjacent properties failed to find this prolific sand and four others were drilling at the close of the year.

All three of these large producers are located outside what is generally regarded as the Bradford field. The field is U-shaped with the arms running northeast-southwest, and it is between the two arms that the new production was developed.

Several surprisingly good wells were also completed in Adams Township, Butler County, by George L. Yaste on the United Presbyterian Orphanage grounds. The best of these, completed in August, had an initial production of 100 bbls. per day. Two others came in for 20 and 15 bbls. per day. These completions furnished the major oil developments outside the water-flood areas.

A new gas field, the Woodhull pool in Steuben County, New York, was discovered during the past year and was the feature of development in the New York-Pennsylvania deep sand gas fields.

The best oil producer in southwest Pennsylvania in years was completed in August on the Mattie I. Scott farm in Center Township, Greene County. It was No. 2 J. B. Orndoff, which topped the Nineveh Thirty-Foot sand at 3,187 feet and at a depth of 3,213 feet produced 220 bbls. the first 10 hours and continued to flow at the rate of about 20 bbls. an hour, or about 500 bbls. the first 24 hours. There was a volume of 500,000 feet of gas along with the oil.

The Mattie Scott farm is at the south end of the Nineveh Thirty-Foot extension and on that line good wells have been completed on the J. W. Milliken, J. H. Orndoff and Samuel Harvey farms.

The search for Oriskany gas production continued in southwest Pennsylvania, southeastern Ohio and in West Virginia with varying results.

The most important gas producing center of the lower Eastern fields continues to be the Oriskany gas pool in Kanawha County, West Virginia, where during the year 121 wells were completed with only six failures. There, the completions ranged from just short of 1,000,000 feet a day to over 20,000,000 feet a day with a shut-in pressure of 1,000 to 2,200 pounds. The average depth of the wells is less than 5,000 feet.

EASTERN FIELDS

Completions by Districts

District—	Comp.	Prod.	Dry	Gas	Prs.
Bradford	2,633	5,545	0	0	863
Allegany	1,177	751	0	0	485
Venango-Clarion	379	407	11	18	105
Butler-Armstrong	124	228	16	16	0
N. Y.-Pa. Gas	68	0	26	44	0
S. W. Pa.	212	1,990	40	108	0
S. E. Ohio	516	5,221	140	133	0
West Virginia	1,018	1,249	171	650	0
Total 1937	6,127	15,391	404	969	1,453
Total 1936	4,528	11,238	348	722	723
Difference	1,599	4,153	56	247	730

Completions by Months

Month—	Comp.	Prod.	Dry	Gas	Prs.
January	462	540	31	66	119
February	420	733	26	73	110
March	423	644	35	70	89
April	468	759	20	66	133
May	523	1,434	30	55	93
June	549	927	32	64	120
July	638	1,331	46	96	153
August	564	3,173	30	70	139
September	581	966	45	102	136
October	580	2,054	42	88	155
November	491	1,172	27	117	104
December	428	1,658	40	102	102
Total 1937	6,127	15,391	404	969	1,453

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Annual Review

29 GULF COAST DISCOVERIES ARE LED BY THE FRIENDSWOOD FIELD

By NEIL WILLIAMS

Exploration along the Gulf Coast district during 1937 established a new high in the number of pool discoveries. The total number of completed wells exceeded the previous year's total, and another record year of production was recorded. Important extensions and deeper pay horizons were opened in older proven fields and a new producing horizon, heretofore unproductive in the district, was developed along the "Conroe Trend."

For the first time, discoveries in Coastal Louisiana were about evenly divided with those on the Texas side. In all 29 new oil and gas fields were opened, 15 on the Texas side, and 14 in Louisiana. Two of the fields in Texas were dry gas fields, while those in Louisiana were oil or distillate pools.

Texas Gulf Coast outstanding discovery of the year was the Friendswood field, Southern Harris County, opened July 12 by Humble Oil & Refining Co. No. 1 Settegast. While the field is in its early development, approximately 1,500 acres have been proven and its estimated potential reserve is very large. The discovery well topped Frio sand showing oil at 5,811 feet and cored practically all sand to a total depth of 6,040 feet. The hole was plugged back and the well completed in a screen setting at 5,802-6,009 feet for an initial production of 650 bbls. of 29 gravity oil per day through a quarter-inch choke. The field is only 3½ miles northeast of the prolific Hastings field. The limits have been partly defined to the south and southeast.

The Call field, Newton County added a small pool to the Conroe Trend with the completion of Houston Oil Co. and Republic Production Co. No. 1 Peavy Moore Lumber Co. section 42, H. & T. C. Survey on September 18. The well flowed 126 bbls. per day through perforated casing at 6,908-18 feet. Two additional tests, northwest and southeast of the discovery wells were dry.

Clam Lake (McFaddin Prospect) Jefferson County, opened December 28, has the appearance of being a major discovery. Shell Petroleum Corp. and others No. 1 McFaddin, S. A. Pace Survey, flowed 25 bbls. per hour through a quarter-inch choke from Miocene sand at 5,913-29 feet, total depth. The well is on a large block held jointly with the Humble Oil & Refining Co. There are several sands above the producing total depth.

A field of questionable potentiality was opened at the Cedar Bayou Prospect, Chambers County by Merit

GULF COAST FIELDS DISCOVERED DURING 1937

Field—	County	Discovery well	Date of completion	No. wells comp. to date	Well spacing	Initial producing capacity— Bbls.	Test	Size choke
Call	Newton	Houston Oil Co. No. 1 Peavy Moore	9-22-37	1	150-300	200.13	24 hrs.	¼" choke
Cheek	Jefferson	Magnolia Petroleum Co. No. 2 Phelan	9-27-37	2	150-300	707.00	24 hrs.	¼" choke
Cotton Lake So.	Chambers	Salt Dome Oil Corp. No. 1-C Lawrence	3-26-37	8	150-300	636.36	24 hrs.	⅛" choke
Danbury Dome	Brazoria	Shell Petroleum Corp. No. 1 Jameson Est.	10- 5-37	2	150-300	104.00	24 hrs.	⅛" choke
Friendswood	Harris	Humble Oil & Ref. Co. No. 1 Settegast	7-10-37	14	466-933	651.00	24 hrs.	¼" choke
Hitchcock*	Galveston	Maco Stewart No. 1 Spillman	9- 3-37	2	150-300	219.00	24 hrs.	¼" choke
Joe's Lake	Tyler	Republic Production Co. No. 2 Hurd	5- 2-37	4	150-300	463.00	24 hrs.	¼" choke
La Belle	Jefferson	Sun Oil Co. No. 2 Broussard & Hebert	2- 6-37	1	150-300	37.00	24 hrs.	⅛" choke
Orange	Orange	Thompson, Ryan & Tillery No. 1 A. Chesson	11-13-37	1	150-300	809.00	24 hrs.	¼" choke
Palacious	Matagorda	Glenn H. McCarthy, Inc., No. 1 Foley	4- 2-37	2	150-300	142.00	24 hrs.	⅛" choke
Sandy Point	Brazoria	J. J. De Arman No. 1 J. A. File	2- 2-37	6	150-300	66.00	24 hrs.	¼" top and 1/16" bottom choke
Seabreeze	Chambers	Sun Oil Co. No. 3 Acom	10-23-37	1	150-300	740.00	24 hrs.	¼" choke
West Columbia New	Brazoria	Texas Co.-Sterling O. & R. No. 1 Phillips	6-25-37	9	150-300	508.00	24 hrs.	⅜" choke
West Columbia Vicksburg	Brazoria	Texas Co. No. 84 Hogg	9- 2-37	1	150-300	356.00	24 hrs.	32/64" choke
West Hardin	Liberty	Jack Frazier No. 1 Hanchey	6-24-37	9	150-300	624.00	24 hrs.	¼" choke
Webster	Harris	Humble O. & R. Co No. 1 Settegast	7-10-37	10	466-933	651.00	24 hrs.	¼" choke
Wilson Creek	Matagorda	United No. & So. Dev. Co. No. 1-A Stoddard	6-15-37	1	150-300	153.00	24 hrs.	¼" choke

*Hitchcock—Discovery well drilled to 10,460 feet by Shell Petroleum Corp. in 1936. However, well blew out and was plugged and abandoned during 1937. Spellman first commercial well.

GULF COAST TEXAS
(Upper District)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
ACE:													
Daily average	144	171	199	213	212	198	119	114	86	81	91	103	
Month	4,464	4,788	6,169	6,387	6,592	5,937	3,689	3,534	2,580	2,511	2,730	3,190	52,551
ALLEN:													
Daily average	6	6	5	5	11	9	.....	6	15	14	11	13	
Month	186	168	155	148	341	270	.....	186	450	424	330	412	3,070
AMELIA:													
Daily average	1,215	1,489	1,794	1,991	3,100	3,697	5,230	6,221	6,279	6,294	5,626	6,298	
Month	37,665	44,092	55,614	59,730	96,100	110,910	162,130	192,851	168,370	195,114	168,780	195,249	1,486,605
ANAHUAC:													
Daily average	9,221	12,403	14,103	13,483	14,152	14,350	12,588	13,030	11,758	10,667	9,260	9,128	
Month	285,851	347,284	437,193	404,490	438,712	400,500	390,228	403,930	352,740	330,677	277,800	282,973	4,352,378
ARRIOLA:													
Daily average	728	709	627	596	547	567	587	567	549	544	545	532	
Month	22,568	19,852	19,437	17,880	16,957	17,010	18,197	17,577	16,470	16,864	16,350	16,496	215,658
BAMMEL:													
Daily average	.....	.....	.....	13	15	13	69	41	29	27	.....	.....	
Month	.....	.....	.....	390	465	390	2,139	1,271	870	837	.....	.....	6,362
BARBERS HILL:													
Daily average	12,945	13,119	12,620	12,157	12,089	13,050	12,500	11,975	11,765	10,866	10,374	10,297	
Month	401,295	367,332	391,220	364,710	374,759	491,500	387,500	371,225	352,950	336,846	311,220	319,214	4,469,771
BATSON:													
Daily average	1,658	1,803	1,871	1,827	2,050	2,037	1,986	1,779	1,627	1,573	1,586	1,607	
Month	51,398	50,484	58,001	54,810	63,550	61,110	61,556	55,149	48,810	48,763	47,580	49,799	651,010
BAY CITY:													
Daily average	97	97	.....	310	202	227	441	555	529	614	735	761	
Month	3,007	2,716	.....	9,300	6,262	6,810	13,671	17,205	15,870	19,034	22,050	23,580	139,505
BIG CREEK:													
Daily average	1,088	1,034	1,027	1,093	1,015	1,127	1,117	1,189	1,038	959	838	795	
Month	33,728	28,952	31,837	32,790	31,465	34,110	34,627	36,859	33,140	29,729	25,140	24,640	377,017
BIG HILL:													
Daily average	.....	.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Month	.....	.....	341	.....	.....	.....	.....	.....	.....	.....	.....	.....	341
BLUE RIDGE:													
Daily average	886	932	909	889	1,223	1,128	1,014	1,067	1,020	879	857	897	
Month	27,466	26,096	28,179	26,669	37,913	33,840	31,434	33,077	30,600	27,249	25,710	27,818	356,051
BOLING:													
Daily average	1,144	1,253	1,298	1,538	1,590	1,697	1,582	1,810	1,667	1,594	1,384	1,458	
Month	35,464	35,084	40,238	46,140	49,290	50,910	49,042	56,110	50,010	49,414	49,520	45,213	548,435
BRENHAM:													
Daily average	22	22	19	12	30	26	38	29	30	38	38	40	
Month	682	616	589	358	930	780	1,178	899	900	1,894	1,200	862	10,888
BROOKSHIRE:													
Daily average	10	9	6	5	5	6	6	6	6	6	14	7	
Month	310	252	186	150	155	180	186	186	180	186	420	222	2,613
BUCKEYE:													
Daily average	193	100	109	120	148	133	268	237	281	256	276	281	
Month	5,983	2,800	3,379	3,600	4,588	3,990	8,308	7,347	8,430	7,936	8,280	8,705	73,346
CALL:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	42	132	30	13	
Month	.....	.....	.....	.....	.....	.....	.....	.....	1,260	4,092	900	415	6,667

(Continued on Next Page)

Oil Co. and others No. 1 T. and M. Wright, S. Christian Smith Survey. Production is from the Marginulina sand through perforated casing at 6,390-92 feet. It flowed an initial production of 29 bbls. per day.

Conroe Trend Revived

The discovery of the Spurger field (Joe's Lake) Tyler County in April by the Republic Production Co. and Houston Oil Co. resulted in a revival of interest along the Conroe Trend. No. 2 Hurd, in the N. Hurd Survey, flowed 275 bbls. of 43 gravity oil per day through a quarter-inch choke from a screen setting in sand and shale showing oil at 7,630-41 feet, the total depth. The significant feature of this strike was that it is producing from the Cook Mountain horizon and opened the way for deeper exploration along the entire trend.

The latter part of January, C. B. Bunte and others opened the Sandy Point field, Brazoria County with No. 1 J. W. Fite, D. Talley Survey which was completed in the Marginulina sand through perforated casing at 6,489-6,501 feet for a production of 49 bbls. of 41 gravity oil per day. Five additional wells have been completed. All wells are producing from a comparatively thin sand section which is expected to keep production confined to small area.

The Labelle field, central part of Jefferson County was opened by Sun Oil Co. No. 2 Hebert and Broussard, W. T. Burton Survey in February. The well flowed 15 bbls. of distillate per day through a quarter-inch choke, but is now flowing 30 bbls. of 49 gravity oil per day under choke from the Frio formation through perforations at 8,211-16 feet.

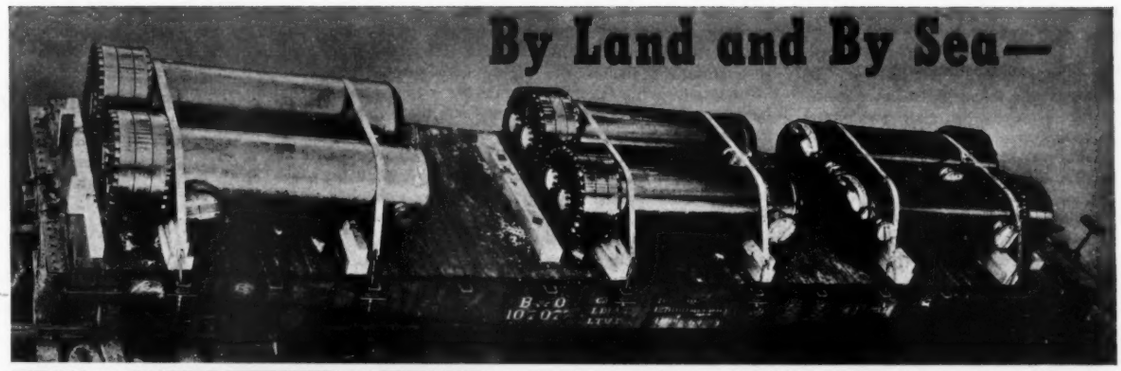
Two miles southwest of the Amelia field in the S.

Gulf Coast Texas Upper District (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
CLAY CREEK:													
Daily average	1,040	1,068	1,088	1,014	1,027	957	777	782	745	682	602	430	
Month	32,238	29,904	33,728	30,418	31,837	28,710	24,087	24,242	22,350	21,142	18,060	13,343	310,059
CLAM LAKE:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	67	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,072	2,072
CLEVELAND:													
Daily average	611	655	695	606	672	639	585	622	573	526	440	440	
Month	18,941	18,340	21,545	18,180	20,832	19,169	18,135	19,482	17,190	16,306	13,200	13,643	214,963
CLINTON:													
Daily average	28	29	12	.....	15	.....	.....	25	22	23	19	18	
Month	868	802	372	.....	465	.....	.....	775	660	713	570	554	5,779
CONROE:													
Daily average	40,754	41,906	44,723	41,590	43,746	43,878	38,918	48,819	43,084	38,609	36,445	35,859	
Month	1,263,374	1,173,368	1,386,413	1,247,698	1,356,126	1,316,340	1,206,458	1,513,389	1,292,520	1,196,879	1,093,350	1,111,633	15,157,548
COTTON LAKE:													
Daily average	530	700	1,039	1,165	1,497	1,138	988	1,102	1,073	855	1,042	1,103	
Month	16,430	19,600	32,209	34,950	46,387	34,140	30,628	34,162	32,190	26,505	31,260	34,185	372,646
DAMON MOUND:													
Daily average	393	480	532	457	429	428	350	299	315	324	319	341	
Month	12,183	13,240	16,492	13,710	13,399	12,840	10,850	9,269	9,450	10,044	9,570	10,578	141,625
DANBURY:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	51	115	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,530	3,568	5,098
DIBOLL:													
Daily average	.....	.....	.....	.....	.....	.....	20	10	7	5	5	5	
Month	.....	.....	.....	.....	.....	.....	620	310	210	155	150	155	1,600
DICKINSON:													
Daily average	3,535	3,620	3,928	3,971	3,851	3,774	5,304	6,060	5,427	5,706	7,633	6,274	
Month	109,585	101,360	121,768	119,126	120,381	113,220	164,424	181,800	162,810	176,886	228,990	194,494	1,794,844
EDNA:													
Daily average	.....	.....	.....	.....	.....	.....	4	5	4	4	4	5	
Month	.....	.....	.....	.....	.....	.....	124	155	120	124	120	155	798
ESPERSON:													
Daily average	2,108	1,940	1,799	1,857	1,568	2,137	1,649	1,649	1,517	1,415	1,308	1,314	
Month	65,348	54,320	55,769	55,710	48,608	64,110	51,119	51,119	45,510	43,865	39,240	40,748	615,466
EUREKA:													
Daily average	30	31	18	25	29	25	81	64	54	75	97	23	
Month	930	868	558	747	899	750	2,511	1,984	1,620	2,325	2,910	698	16,800
FANNETT:													
Daily average	807	757	726	729	1,484	1,307	877	647	780	787	722	703	
Month	25,017	21,196	22,506	21,870	46,004	39,210	27,187	20,057	23,400	24,397	21,660	21,786	314,290
FRIENDSWOOD:													
Daily average	.....	.....	.....	.....	.....	.....	106	219	572	794	721	705	
Month	.....	.....	.....	.....	.....	.....	3,286	6,789	17,160	24,614	21,630	21,846	95,325
GANADA:													
Daily average	.....	.....	.....	34	29	32	46	56	59	57	69	92	
Month	.....	.....	.....	1,020	899	960	1,426	1,936	1,770	1,767	2,070	2,856	14,704
GARWOOD:													
Daily average	.....	.....	.....	.....	.....	.....	.....	2	.....	2	2	3	
Month	.....	.....	.....	.....	.....	.....	.....	62	.....	62	60	78	262
GOOSE CREEK:													
Daily average	2,536	2,701	2,745	2,765	2,837	2,537	2,421	2,283	2,042	1,953	1,821	1,804	
Month	78,616	75,628	85,095	82,950	87,947	76,110	75,051	70,773	61,260	60,543	54,630	55,911	864,514
GREENS LAKE:													
Daily average	38	44	33	34	35	33	27	24	20	18	19	23	
Month	1,178	1,232	1,023	1,019	1,085	990	837	744	600	558	570	717	10,553
HANKAMER:													
Daily average	1,903	1,814	1,733	1,606	1,603	1,467	1,682	1,669	1,558	1,474	1,184	1,290	
Month	58,993	50,792	53,723	48,180	49,693	44,010	52,142	51,739	46,740	45,694	35,520	39,995	577,221
HARDIN:													
Daily average	350	356	370	375	365	367	489	641	748	953	1,170	1,444	
Month	10,850	9,968	11,470	11,250	11,315	11,010	15,159	19,871	22,440	29,543	35,100	44,752	132,728
HASTINGS:													
Daily average	8,359	10,192	13,466	13,381	13,967	13,218	14,710	21,439	20,700	20,622	19,011	18,808	
Month	249,129	285,376	417,446	401,428	432,977	396,540	456,010	664,609	621,000	639,282	570,330	583,037	5,717,164
HAWKINSVILLE:													
Daily average	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Month	441	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	441
HIGH ISLAND:													
Daily average	3,188	3,440	3,700	3,471	3,551	2,923	3,505	3,541	3,224	2,810	2,403	3,506	
Month	98,828	96,320	114,700	104,127	120,081	87,690	108,650	109,771	96,720	87,110	72,090	108,671	1,204,758
HITCHCOCK:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	87	140	142	232	
Month	.....	.....	.....	.....	.....	.....	.....	.....	2,610	4,340	4,260	7,209	18,419
HULL:													
Daily average	5,150	5,208	5,855	6,143	6,319	6,187	7,005	7,116	8,284	8,552	8,658	8,772	
Month	159,650	145,824	181,505	184,290	195,889	185,610	217,155	220,596	248,520	265,112	259,740	271,929	2,535,820
HUMBLE:													
Daily average	3,237	3,257	4,039	3,257	3,192	3,332	3,475	3,674	3,812	3,814	3,236	3,508	
Month	100,347	91,196	125,209	97,710	98,952	99,960	107,725	113,894	114,360	118,234	97,080	108,752	1,273,419
HUNTINGTON:													
Daily average	15	16	15	16	15	14	22	20	20	19	19	14	
Month	465	448	465	479	465	420	682	620	600	589	570	434	6,237
KITTRELL:													
Daily average	1,016	1,058	1,081	1,060	963	979	983	937	927	881	792	843	
Month	31,496	29,624	33,511	31,800	29,953	29,370	30,473	29,047	27,810	27,311	23,760	26,137	350,292
KUBELA:													
Daily average	.....	.....	.....	.....	.....	.....	35	102	99	84	57	65	
Month	.....	.....	.....	.....	.....	.....	1,085	2,162	2,970	2,604	1,710	2,015	13,546
LABELLE:													
Daily average	.....	2	63	77	69	68	48	29	31	35	32	31	
Month	.....	56	1,953	2,308	2,139	2,040	1,488	899	930	1,085	960	953	14,811
LIBERTY:													
Daily average	606	575	565	636	612	610	558	577	620	648	580	580	
Month	18,786	16,100	17,515	19,080	18,972	18,300	17,298	17,887	18,600	20,088	17,400	17,977	218,003
LIVINGSTON:													
Daily average	2,923	3,037	2,979	2,888	2,821	2,734	2,696	2,724	2,556	2,471	2,329	2,454	
Month	90,613	85,036	92,349	86,640	87,451	82,020	83,576	84,444	79,236	76,601	69,870	74,066	991,902
LOCKRIDGE:													
Daily average	54	22	132	157	503	527	690	1,215	1,288	1,276	1,169	1,218	
Month	1,674	616	4,092	4,708	15,593	15,810	21,390	37,665	38,640	39,556	34,770	37,750	252,264
LOST LAKE:													
Daily average	151	156	186	177	156	142	130	140	123	117	131	122	
Month	4,681	4,368	5,766	5,310	4,836	4,260	4,030	4,340	3,690	3,627	3,930	3,771	52,609
LOUISE:													
Daily average	1,823	1,834	1,834	1,756	1,762	1,727	1,543	1,704	1,612	1,520	1,574	1,572	
Month	56,513	51,352	56,854	52,680	54,622	51,810	47,833	52,824	48,360	47,120	47,220	48,735	615,923
MAGNET:													
Daily average	.....	.....	19	20	241	207	272	303	484	818	912	1,068	
Month	.....	.....	589	597	7,471	6,210	8,432	9,393	14,520	25,358	27,360	33,094	133,024

(Continued on Page 150)



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Stiver Survey, Jefferson County, Magnolia Petroleum Co. No. 1 J. H. Phelan, flowed 392 bbls. of distillate per day through a quarter-inch choke from a plugged back depth of 8,460 feet. Gravity of the distillate tested 61.8 degrees. The discovery was made June 26. The company's second test, No. 2 J. H. Phelan, 933 feet south of the discovery well was completed several weeks later in 5 feet of Frio sand bottomed at 8,682 feet for an initial production of 690 bbls. of 44 gravity oil per day through a quarter-inch choke.

Small Pools in Matagorda

In Matagorda County, the Palacios field was opened in April by Glenn H. McCarthy No. 1 Gregory Foley, completed in the Frio formation through perforated casing at 8,573-83 feet, initial production 175 bbls. of 53 gravity distillate per day through a three-sixteenths inch choke. The Atlantic Refining Co. purchased operating control from McCarthy and contracted to drill six wells. Two of these were distillate wells and the remainder dry holes. Location is in the L. Goodwin Survey. In the same county, 2½ miles south of the Buckeye field, United North and South Development opened the Wilson Creek field in June with No. 1 Stoddard in the J. S. Cotton Survey. Production is from the Frio sand bottomed at 9,982 feet. The well had an initial flow of 5 bbls. of 37.5 gravity oil per hour through a three-sixteenths inch choke.

Distillate production was opened on the old Bammel Prospect, Harris County in April by Hamill & Smith and others No. 1 Zapp. Production was from the Cockfield section through perforated casing at 6,412-28 feet with an initial flow of 20 bbls. of water-white distillate through a 9/64-inch choke. Approximately one mile northeast, Superior Oil Producing Co. No. 1 Beutler was later completed as a distillate producer at 6,170-75 feet. The hole was plugged back from 10,564 feet.

In southeastern Jackson County, Texas Co. opened the Ganado field in April with No. 1 T. N. Mauritz, Morris and Cummings Survey, initial flow 75 bbls. through a three-sixteenths inch choke from a screen setting at 5,080-5,111 feet. Additional development failed to develop any large production.

Two structures in Chambers County, originally proven for distillate production, were converted into oil fields. At Seabreeze, Sun Oil Co. No. 3 Acom, 933 feet south of the discovery well, flowed 740 bbls. of 40.5 gravity oil per day through a quarter-inch choke. Production was through perforations at 8,415-40 feet. In the South Cotton Lake field, S. Barrow Survey, Salt Dome Oil Corp. No. 1-C Lawrence cored oil sand in the Frio formation at 6,498-6,503 feet where it was completed, flowing 636 bbls. of 32 gravity oil per day through a quarter-inch choke. The field is 2½ miles south of the Cotton Lake field.

TEXAS GULF COAST

Summary of Operations During 1937

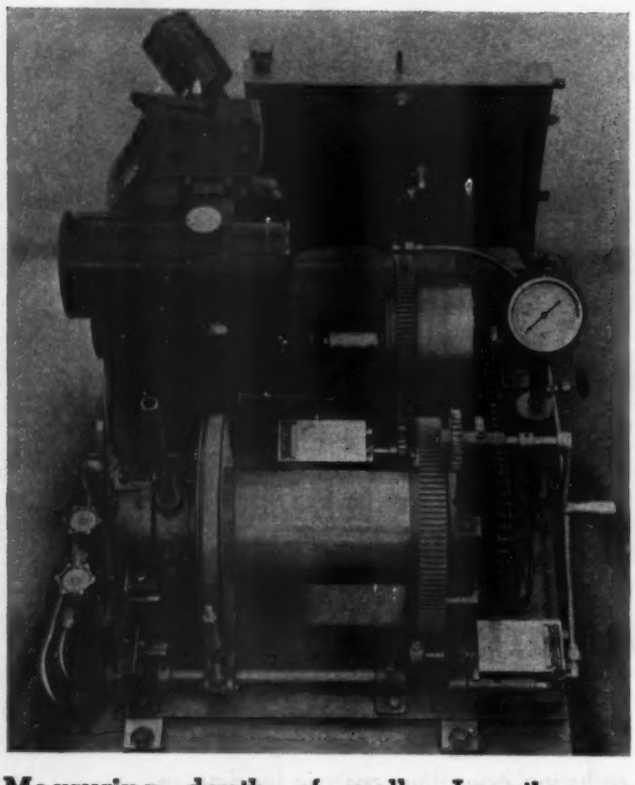
Field—	Comp.	Prod.	Dry	Gas
Ace	5	80	4	0
Amelia	138	62,160	12	5
Anahuac	90	44,131	6	5
Batson	2	65	1	0
Big Creek	7	1,244	1	0
Big Hill	3	54	2	0
Blue Basin	1	0	0	1
Blue Ridge	7	1,190	2	2
Bammel	2	16	0	1
Boling	8	1,937	2	0
Barbers Hill	6	1,832	2	0
Bay City	4	1,330	0	0
Clay Creek	7	77	6	0
Call	3	350	2	0
Cleveland	7	1,633	2	1
Conroe	10	5,882	1	0
Cotton Lake	14	3,059	2	0
Clinton	2	0	1	1
Damon Mound	1	26	0	0
Dickinson	51	25,900	2	1
Danbury	1	320	0	0
Esperson	8	1,170	2	0
Edna	1	0	0	1
Fannett	3	981	1	0
Fairbanks	6	1,441	1	0
Fox	3	972	0	1
Five Corners	7	965	0	0
Friendswood	16	6,190	5	0
Ganado	4	129	1	0
Garwood	1	15	0	0
Greens Lake	1	0	1	0
Greta	6	4,315	2	0
Goose Creek	6	238	3	0
Hughes	1	0	0	1
Hastings	325	176,407	11	0
Heyser	85	16,359	5	1
Hitchcock	6	683	4	0
Hankamer	3	168	0	1
Hawkinsville	1	0	1	0
Hull	25	8,217	4	1
High Island	10	2,046	1	0
Humble	7	1,455	0	0
Hardin	16	5,591	4	0
Louise	8	1,022	2	0
Long Point	1	0	0	1
Keeran	8	1,694	2	0
La Belle	2	15	1	0
Lockridge	24	8,590	2	1
Livingston	4	488	1	1
Magnet	18	2,295	2	1
Manvel	27	8,073	8	0
Mykawa	2	504	0	0
Markham	15	1,253	8	1
Mauritz	1	441	0	0
Lake View	1	0	1	0
Katy	1	0	0	1
McFaddin	4	487	0	1
Nome	35	8,226	6	4
North Cheek	2	1,082	0	0
Old Ocean	4	1,180	0	0
Orange	2	808	1	0
Orchard	4	626	2	0
Pierce Junction	9	3,370	1	0
Pickett Ridge	8	505	3	1
Placedo	55	10,240	1	3
Pledger	1	0	0	1
Palacios	6	279	4	0
Port Neches	2	557	1	0
Quintana-Oconnor	99	127,285	0	0
Raccoon Bend	2	3,305	12	0
Refugio	2	9,015	3	0
Sandy Point	8	333	2	0
Saratoga	1	29	0	0
Silsbee	25	7,978	1	2
Segno	30	10,680	5	0
Seabreeze	8	1,604	3	1
Spurger	4	2,087	0	0
Spanish Camp	3	0	0	3
Spindletop	5	968	1	0
South Houston	29	7,077	6	0
Sour Lake	2	150	0	1
Splendora	1	0	1	0
Sugarland	1	0	1	0
Telferno	5	0	3	2
Thompson	4	365	1	0
Tomball	78	25,773	5	9
Turtle Bay	22	8,660	2	3
Van Vleck	8	4,081	0	0
West Columbia	14	5,882	2	0
Withers	27	4,027	3	1
Wilson Creek	1	120	0	0
Miscellaneous	122	0	122	0
Total	1,695	649,782	313	61

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	92	24,765	26	2
February	90	28,109	20	2
March	125	39,020	32	5
April	118	40,081	23	4
May	168	51,402	35	10
June	167	67,888	23	10
July	135	60,249	24	4
August	199	84,949	37	6
September	144	69,295	22	3
October	153	64,305	22	7
November	169	70,067	22	6
December	135	49,652	27	2
Total, 1937	1,695	649,782	313	61
Total, 1936	1,226	375,217	284	40
Difference	469	274,565	29	21

A Complete Unit for—

C. A. Mathey Measuring Line Reel



Measuring depth of wells—Locating an obstruction—Locating fluid level—To run bottom hole pressure and temperature bombs.

Unit mounted in trailer. Powered by 4 h.p. gasoline engine

5 Points of Superiority

1. Mathey measure meter and Hay pulley available for all types.
2. Hydraulic governor controls speed of line when running-in.
3. Hydraulic speed control with overload attachment prevents line breakage and controls speed when coming-out.
4. Hydraulic weight indicator.
5. Driven by power take-off from car, or self contained gasoline engine power.

Write for descriptive catalog

C. A. MATHEY MACHINE WORKS

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New Sands Discovered

New sand discoveries were opened in several old fields along the Texas side of the Gulf Coast. On the southwest flank of the Orange field, Orange County, Tillery & Ryan No. 1 Chesson, William Dyson Survey, flowed 808 bbls. of 35 gravity oil per day through a quarter-inch choke from the Frio sand at 5,930-46 feet, total depth. The discovery well is 1 mile from shallow Miocene production. In the same county and on the northwest flank of the Port Neches field, Texas Co. No. 6 Starks cored oil sand in the Marginulina at 5,920-44 feet and was completed for 420 bbls. of 37.5-gravity oil per day through a three-eighths inch choke. One mile south of production at the Segno field, Gulf Oil Corp. No. 8 Wing was completed in the Lower Saline Bayou formation through perforated casing at 6,261-64 feet for 737 bbls. per day through a quarter-inch choke. All production heretofore had been from the Upper Cockfield formation from 5,100 to 5,300 feet.

LOUISIANA GULF COAST

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Abbeville	2	541	0	0
Anse La Butte	6	420	3	0
Bayou Blue	4	48	2	1
Bayou Des Allemonds	1	443	0	0
Bayou Mallet	2	0	1	1
Bayou Sale	1	1,152	0	0
Bay St. Elaine	2	972	1	0
Big Lake	2	660	0	0
Black Bayou	3	1,190	1	0
Bosco	2	0	1	0
Caillou Island	12	9,106	1	0
Cameron Meadows	8	978	3	1
Cankton	2	9	1	0
Charenton	9	933	5	1
Choctaw	5	2,142	2	0
Crowley North	3	1,471	1	0
Darrow	9	1,952	6	0
Dog Lake	3	4,518	0	0
Edgerly	1	0	1	0
Elton South	1	54	0	0
Fausse Point	2	18	1	0
Four Isle	1	0	1	0
Garden Island	5	2,103	0	0
Gibson	6	4,760	1	0
Gillis	25	6,135	7	3
Gueydan	1	56	0	0
Hackberry	43	11,303	15	1
Iowa	8	3,118	0	0
Jeanerette	17	7,735	5	0
Jennings	46	18,868	5	0
Lafitte	8	12,184	0	0
Lake Barre	2	909	0	0
Lake Hermitage	1	0	1	0
Lake Long	1	425	0	0
Lake Pelto	4	3,004	1	0
Lake Washington	2	450	0	0
Leesville	17	6,266	3	1
Lirette	1	888	0	0
Lockport	1	175	0	0
New Iberia	26	11,794	1	0
Port Barre	2	0	2	0
Potash	17	25	16	0
Quarantine Bay	1	845	0	0
Roanoke	5	3,826	0	0
Roanoke South	2	92	0	0
Sorrento	4	0	4	0
South Jennings	1	0	1	0
Starks	4	200	2	1
St. Martinsville	5	456	5	0
Sulphur	12	4,440	1	0
Tepetate	18	2,885	3	0
Valentine	15	6,731	1	0
Venice	2	1,095	0	0
Villa Platte	1	265	0	0
Vinton	4	863	1	0
White Castle	2	641	1	0
Miscellaneous	63	0	63	0
Total	453	139,144	170	10

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	35	14,262	8	0
February	23	5,355	6	1
March	48	14,493	21	1
April	28	7,281	11	1
May	37	16,602	10	0
June	43	12,309	20	1
July	35	9,808	13	1
August	55	17,919	20	1
September	36	9,993	13	1
October	34	10,184	13	1
November	47	12,571	21	1
December	32	8,367	14	1
Total 1937	453	139,144	170	10
Total 1936	392	143,045	128	7
Difference	61	3,901	42	3

A shallow sand discovery in the northwest portion of the Hastings field, Brazoria County, resulted in a twin-well drilling program which added several thousand additional acres. The discovery was made by Showers & Moncrief No. 1 Hughey, completed in a 5,800-foot sand for a good producer. This sand has been found productive only in this part of the field and is found from 5,600 to 5,800 feet. The main pay is the Frio sand at approximately 6,070 feet. Deeper drilling in the Old Ocean field, Brazoria County, opened the first 10,000-foot production on the Texas Coast. Harrison & Abercrombie No. 3 Bernard, southwest side of the field, drilled to 10,427 feet and was completed from a screen setting at 10,263-93 feet for an initial production of 15 bbls. of 50-gravity oil per hour through a quarter-inch choke. Additional producers have been completed from 10,200 feet to 10,660 feet. In the same county, on the north flank of the old West Columbia field, Sterling Oil & Refining Co. and Texas Co. No. 1 J. G. Phillips opened the first Frio production for that field. Sand at 5,284-89 feet yielded an initial production of 500 bbls through a three-eighths inch choke. Additional development also opened production from the Vicksburg formation at 5,100 feet. The productive area centers in the George Tennille Survey.

In the Hull field, Liberty County, Houston Production Co. No. 1 Hannah, J. Devore Survey, opened a new sand on the southeast flank with an initial production of 857 bbls. per day through a quarter-inch choke from a sand bottomed at 4,982 feet.

New Dome Production

The first commercial production was opened on the old Danbury dome in Brazoria County and at the Hitchcock prospect in Galveston County. Rowan Drilling Co. No. 1 Jameson, Danbury dome, on a farmed-out lease of Shell Petroleum Corp. in the Henry Austin Survey, was completed through perforated casing at 2,045-50 feet for 120 bbls. per day through a quarter-inch choke. While this sand was logged in several wells previously drilled by Shell Petroleum Corp., only gas production had been developed.

Maco Stewart No. 1 fee opened Miocene production for the Hitchcock Prospect in September with the completion of No. 1 fee. Sand was topped at 5,132 feet and cored to 5,156 feet, where it was completed for 209 bbls. per day through a quarter-inch choke. It offset Shell Petroleum Corp. No. 1 Stewart, a deep test which blew out from the same sand during the early part of the year. The latter company dropped its holdings after drilling two wells. Two dry holes northwest of the discovery were abandoned, but one additional producer has been completed.

Texas Co. No. 1 Gus Kluck opened dry gas production for the Blue Basin Prospect, Wharton. It is located southwest of three deep holes in the Joseph Hyland

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Survey and was completed through perforated casing at 4,642-57 feet.

Important extensions and a new sand discovery were recorded for the Dickinson field in Galveston County and the old Fannett field in Jefferson County. Diadem Oil Co. No. 1 Way, 1 mile northwest of the Dickinson field proper was completed in the Frio sand through perforated casing at 8,095 feet. The well is in the P. G. Merritt Survey and resulted in increased drilling operations that have added several hundred additional acres to the field. On the south flank of the Fannett field, Gulf Oil Corp. No. 7 Junker, a few hundred feet south of shallow production cored Frio sand at 6,535-6,612 feet and was completed for 691 bbls daily through a quarter-inch choke.

Louisiana Coastal Discoveries

While all of the discoveries in the Louisiana portion of the Gulf Coast division are in their early development, initial flow of the discovery wells indicate large reserves. In central Acadia Parish, Humble Oil & Refining Co. No. 1 Federal Land Bank, in section 34-8s-1e, opened the North Crowley field September 25 with an initial flow of 679 bbls. of 36-gravity oil. Production was from the Heterostegina section through perforated casing at 8,092-8,102 feet.

The Abbeville field, Vermilion Parish, originally discovered as a distillate field in March by the completion of Continental Oil Co. No. 1 O. C. Hebert, was converted into an oil field October 6 with the completion of the same company's No. 1 Brookshire, a quarter mile east of the discovery well. The hole was drilled to 11,909 feet and production obtained by perforating the casing in the Miocene sand at 7,884-90 feet. The well had an initial flow of 360 bbls. of 41.5-gravity oil through a three-sixteenths inch choke. This discovery well was completed at 7,666-75 feet as a good oil producer. The field centers in section 20-12s-3e.

10,000-Foot Production

Two fields with production below 10,000 feet were opened in St. Mary Parish by Texas Co. No. 1 Bayou Sale, section 40-17s-9e, flowed 1,152 bbls. of 37-gravity oil per day through a quarter-inch choke. Production is from the Miocene sand through perforated casing at 10,863-73 feet, and is the deepest production in the

Gulf Coast Texas Upper District (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
MANVEL:													
Daily average	9,792	9,885	10,604	9,659	9,746	9,687	8,891	10,236	8,904	9,618	8,760	8,269	
Month	303,552	276,580	328,724	279,770	302,126	290,610	275,612	317,316	267,120	298,158	262,800	256,329	3,458,697
MARKHAM:													
Daily average	1,926	1,898	1,876	1,882	1,621	1,647	1,805	1,753	1,651	1,740	1,786	1,509	
Month	59,706	53,144	58,156	56,460	50,251	49,410	55,955	54,343	54,343	53,940	53,580	46,766	646,054
MAURITZ:													
Daily average	122	117	105	120	187	195	140	141	123	108	138	104	
Month	3,782	3,276	3,255	3,600	5,797	5,850	4,340	4,371	3,690	3,348	4,140	3,218	48,667
MYKAWA:													
Daily average	2,488	2,524	2,410	2,022	2,163	2,153	1,809	1,768	1,432	1,546	1,328	1,615	
Month	77,128	70,672	74,710	60,657	67,053	64,590	56,079	54,808	42,960	47,926	39,840	50,069	706,492
NASH:													
Daily average	49	51	48	53	49	47	45	40	27	40	13	30	
Month	1,519	1,938	1,488	1,590	1,519	1,410	1,395	1,240	810	1,240	390	916	15,455
NOME:													
Daily average	756	1,034	1,220	1,222	1,439	1,517	1,968	2,134	1,971	1,946	1,624	2,191	
Month	23,436	28,952	37,820	36,660	44,609	45,510	61,008	66,154	59,130	60,326	48,720	67,927	580,252
NORTH CHEEK:													
Daily average	.....	.....	.....	.....	.....	.....	65	32	76	337	327	163	
Month	.....	.....	.....	.....	.....	.....	2,015	992	2,280	10,447	9,810	5,060	30,604
NORTH DAYTON:													
Daily average	137	134	131	126	111	109	114	129	124	116	118	111	
Month	4,247	3,752	4,061	3,780	3,441	3,270	3,534	3,999	3,720	3,596	3,540	3,447	44,387
OLD OCEAN:													
Daily average	541	436	934	984	812	837	1,291	1,454	1,703	1,935	2,071	1,733	
Month	16,771	12,508	27,954	29,518	25,172	25,110	40,021	45,074	51,090	59,985	62,130	53,720	449,053
ORANGE:													
Daily average	715	728	728	684	545	706	637	641	649	594	532	851	
Month	22,165	20,384	22,568	20,520	16,895	21,180	19,747	19,871	19,470	18,414	15,960	26,370	243,544
ORCHARD:													
Daily average	517	531	521	487	608	698	474	487	493	446	377	363	
Month	16,027	14,868	16,151	14,612	18,848	20,940	14,694	15,097	14,790	13,826	11,310	11,265	182,428
PALACIOS:													
Daily average	.....	.....	.....	24	87	96	95	124	190	174	118	202	
Month	.....	.....	.....	720	2,697	2,880	2,945	3,844	5,700	5,394	3,540	6,267	33,987
PICKETT RIDGE:													
Daily average	1,820	1,856	2,531	2,352	2,387	2,218	1,970	1,974	1,715	1,510	1,315	1,648	
Month	56,420	52,168	78,461	70,560	73,997	66,540	61,070	61,194	51,450	46,810	39,450	51,084	709,204
PIERCE JUNCTION:													
Daily average	4,002	3,852	3,978	3,881	3,418	3,315	3,016	3,245	3,331	2,946	2,519	2,942	
Month	124,062	107,856	123,318	116,430	105,958	99,450	93,496	100,595	99,930	91,326	75,570	91,199	1,229,190
PORT NECHES:													
Daily average	988	1,166	1,220	1,135	1,104	1,087	1,249	1,288	1,540	1,284	1,280	1,273	
Month	30,628	32,648	37,820	34,050	34,224	32,610	38,719	39,928	46,200	39,804	38,400	39,455	444,486
RACCOON BEND:													
Daily average	6,015	6,187	6,330	6,114	6,202	5,836	5,607	5,571	5,299	4,921	4,290	4,134	
Month	186,465	173,236	196,230	183,418	192,262	175,080	173,817	172,701	158,970	152,551	128,700	128,152	2,021,582
SANDY POINT:													
Daily average	40	40	71	70	79	115	115	158	140	261	307	328	
Month	1,240	1,120	2,201	2,098	2,449	3,450	3,565	4,898	4,200	8,091	9,210	10,166	51,448
SARATOGA:													
Daily average	914	908	910	942	978	1,012	950	978	1,050	971	919	927	
Month	28,334	25,424	28,210	28,260	30,318	30,360	29,450	30,318	31,500	30,101	27,570	28,730	177,669
SATSUMA:													
Daily average	316	367	407	426	415	357	325	375	358	359	344	578	
Month	9,796	10,296	11,396	12,780	12,865	10,710	10,075	11,625	10,740	11,129	10,320	17,913	139,645
SEABREEZE:													
Daily average	.....	8	10	9	11	18	23	11	25	114	597	252	
Month	.....	224	310	270	341	540	713	341	750	3,534	17,910	7,822	32,755
SEGNO:													
Daily average	77	122	240	439	757	967	1,928	2,337	2,105	1,911	1,674	1,778	
Month	2,387	3,416	7,440	13,170	23,467	29,010	59,768	72,447	63,150	59,241	50,220	55,121	438,837
SILSBEE:													
Daily average	471	470	892	846	1,061	1,087	1,460	1,650	1,669	1,608	1,507	1,773	
Month	14,601	13,160	27,652	25,380	32,891	32,610	45,260	51,150	50,070	49,848	45,210	54,972	442,804
SOUR LAKE:													
Daily average	1,474	1,547	1,633	1,667	1,671	1,687	1,618	1,622	1,564	1,525	1,434	1,452	
Month	45,694	43,316	50,623	50,010	51,801	50,610	50,158	50,282	46,920	47,275	43,020	45,000	574,709
SOUTH HOUSTON:													
Daily average	5,935	6,324	6,311	6,102	6,271	5,936	5,426	5,401	4,866	4,353	3,958	3,763	
Month	183,985	177,072	195,641	183,060	194,411	158,080	168,206	167,431	145,980	134,943	118,740	116,650	1,944,199
SPINDLETOP:													
Daily average	2,129	2,226	2,404	2,503	2,707	2,716	2554	2,441	2,264	2,460	2,226	2,445	
Month	65,999	62,328	74,524	75,090	83,917	81,480	79,174	65,671	67,920	76,260	66,780	75,798	874,941
SPURGER:													
Daily average	.....	.....	.....	.....	15	152	400	422	337	309	315	349	
Month	.....	.....	.....	.....	465	4,560	12,400	13,082	10,110	9,579	9,450	10,831	70,477
SUGARLAND:													
Daily average	4,000	4,826	5,095	4,508	4,463	3,885	3,729	3,732	3,113	2,638	2,024	1,849	
Month	124,000	135,128	157,945	135,240	138,353	116,550	115,599	115,692	93,390	81,778	60,720	57,318	1,331,713
THOMPSON:													
Daily average	7,992	9,385	12,581	12,709	12,601	11,458	11,103	13,914	12,654	11,116	8,852	9,223	
Month	247,752	262,780	390,011	381,270	400,631	343,740	344,193	462,334	379,620	344,596	265,560	285,899	4,108,386
TOMBALL:													
Daily average	7,464	7,805	8,719	8,731	8,858	8,537	8,778	8,856	8,585	8,298	7,880	7,850	
Month	221,384	278,540	270,289	261,930	274,598	246,110	272,118	274,536	257,550	257,238	236,400	243,355	3,034,048
TURTLE BAY:													
Daily average	717	835	897	805	851	837	823	856	965	1,024	1,089	1,208	
Month	22,227	22,380	28,807	24,150	26,381	25,110	25,513	26,636	28,950	31,744	32,670	37,445	331,913
VANDERBILT:													
Daily average	85	85	85	85	81	80	85	71	73	61	67	60	
Month	2,635	2,380	2,635	2,560	2,511	2,400	2,635	2,201	2,190	1,891	2,010	1,860	27,898
VAN VLECK:													
Daily average	1,526	1,927	1,943	1,945	2,125	1,963	1,787	2,300	1,955	1,679	1,322	1,758	
Month	47,306	53,956	60,233	58,350	65,875	58,890	55,397	73,300	58,650	52,049	39,660	54,496	678,162
WEST COLUMBIA:													
Daily average	2,233	2,039	2,089	2,002	2,004	1,865	1,879	2,572	2,656	2,511	2,652	3,360	
Month	69,273	57,092	64,759	60,060	62,124	55,950	58,249	79,732	79,680	77,841	79,560	104,171	848,441
WITHERS:													
Daily average	1,156	1,338	1,443	1,525	1,817	1,717	1,677	1,838	1,729	1,696	1,515	1,535	
Month	35,836	37,268	44,733	45,750	56,327	51,510	47,709	50,716	44,910	45,477	39,870	47,579	547,679
Daily average	176,268	188,761	206,309	199,244	207,675	205,531	201,236	228,033	213,938	204,562	191,467	194,628	201,563
Total 1937	5,464,308	5,285,312	6,395,286	5,977,310	6,437,931	6,165,946	6,238,385	7,069,034	6,418,129	6,341,415	5,744,010	6,033,455	73,570,507
Total 1936	4,909,001	4,756,377	5,268,512	5,385,780	5,620,269	5,435,990	5,515,768	5,599,983	5,158,173	5,488,984	4,783,181	5,137,086	63,059,104
Total 1935	4,690,021	4,187,176	4,738,908	4,536,400	4,602,142	4,919,970	4,733,704	4,581,552	4,557,780	4,737,792	4,609,628	4,972,679	55,887,752

GOLDEN ANNIVERSARY

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Looking back over our record brings a feeling of mellowness and fulfillment. But—we realize that mellowness doesn't build better products. The spirit of achievement that went into the first Darling Products fifty years ago—that's what will continue to make Darling the best your money can buy!

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DARLING GATE VALVES

DARLING VALVE and MANUFACTURING CO.
Williamsport, Pa.

district. The field was opened August 12. It is referred to as Bayou Sale or Horse Shoe Bayou. In December, same company's No. 1 State Bateman Lake, section 21-16s-12e, opened the Wax Lake field with a flow of 350 bbls. a day through a three-sixteenths inch choke. The oil tested 33 degrees. Production is from the Miocene sand through perforated casing at 10,900-05 feet, the hole having been plugged back from 11,808 feet due to mechanical trouble.

In Lafourche parish, Fohs Oil Co. in June added a deep-seated field with the completion of No. 1 State Long Lake, section 65-17s-19e. It flowed 400 bbls. of 38.3-gravity oil per day through a 12/64-inch choke. Production is from the Miocene sand through perforated casing at 9,365-73 feet. Same company's No. 3 State, 1,320 feet due north of the discovery, tested salt water in the discovery horizon and is drilling below 10,000 feet.

Amerada Petroleum Corp. and Louisiana Land & Exploration Co. opened the Bayou Des Allemands field with the completion of No. 1 State. The structure was proved a salt dome when salt formation was topped at 8,632 feet and the completion was made July 26 after plugging back and completing at 6,820-30 feet. It flowed 443 bbls. of 35-gravity oil per day through a quarter-inch choke. The well is in section 13-15s-20e.

The Venice salt dome, Plaquemines Parish, received its first commercial production July 26 with the completion of Tide Water Associated Oil Co. No. 3 Manhattan Land & Fruit Co., section 26-21s-30e. Producing

GULF COAST TEXAS
(Lower District)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
AGUA DULCE:													
Daily average	167	239	433	440	296	319	233	398	363	270	486	450	
Month	5,177	6,692	13,423	13,290	9,176	9,570	7,123	12,338	10,890	8,370	14,580	13,950	124,489
BALDWIN:													
Daily average	473	453	455	404	422	400	412	422	414	397	320	295	
Month	14,663	12,656	14,105	12,120	13,082	12,000	12,772	13,082	12,420	12,307	9,600	9,030	147,837
BENTONVILLE:													
Daily average	600	707	821	608	700	667	459	356	440	205	353	342	
Month	18,600	19,796	25,451	18,240	21,700	20,010	14,229	11,036	13,200	6,355	10,590	10,602	189,809
CAESAR:													
Daily average	675	1,680	976	685	619	585	422	349	460	310	328	438	
Month	20,925	47,040	30,256	20,550	19,189	17,550	13,082	10,819	13,800	9,610	9,840	13,578	226,239
COLLETTO CREEK:													
Daily average	798	798	798	749	733	659	648	634	615	559	496	465	
Month	24,738	22,344	24,738	22,470	22,723	19,770	20,088	19,654	18,450	17,329	14,880	14,415	241,599
DIRKS:													
Daily average	4,029	4,038	3,932	3,709	3,700	3,323	3,309	3,867	3,432	3,131	3,093	2,643	
Month	124,899	113,064	121,892	111,270	114,700	99,690	102,579	119,877	102,960	97,061	92,790	81,942	1,282,724
FLOUR BLUFF:													
Daily average	1,704	2,231	3,083	3,287	3,937	3,849	4,918	6,754	6,323	5,674	4,952	5,258	
Month	52,824	62,468	95,573	98,610	122,047	115,470	152,458	209,374	189,690	175,894	148,560	162,993	1,585,961
GRETA:													
Daily average	15,938	14,581	14,779	13,468	13,576	12,512	12,583	14,832	12,557	10,875	9,441	8,883	
Month	494,078	408,268	458,149	404,040	420,856	375,360	390,073	459,792	376,710	337,125	283,230	275,363	4,683,044
HEYSER:													
Daily average	2,114	2,490	3,050	3,153	3,825	3,549	4,117	4,641	5,903	5,470	5,995	6,813	
Month	65,534	69,720	94,550	94,590	118,575	106,470	127,627	143,871	177,090	169,570	179,850	211,215	1,558,662
KEERAN:													
Daily average	315	392	296	603	584	617	623	664	688	639	603	572	
Month	9,765	10,976	9,176	18,090	18,104	18,510	19,313	20,584	20,640	19,809	18,090	17,732	300,789
LONDON:													
Daily average	42	107	100	90	154	127	116	109	104	93	72	119	
Month	1,302	2,996	3,100	2,700	4,774	3,810	3,596	3,379	3,120	2,883	2,160	3,689	27,509
LUBY:													
Daily average	.....	.....	.....	.....	.....	.....	119	121	341	461	709	890	
Month	.....	.....	.....	.....	.....	.....	3,689	3,751	10,230	14,291	21,270	27,594	80,825
McCAMPBELL:													
Daily average	425	747	999	1,134	1,087	1,647	2,486	3,238	3,732	3,595	4,321	4,284	
Month	13,175	20,916	30,969	34,020	33,697	49,410	77,066	100,378	111,960	111,445	129,630	132,795	845,461
McFADDIN-O'CONNOR:													
Daily average	268	237	235	220	234	205	202	211	251	256	186	219	
Month	8,308	6,636	7,285	6,600	7,254	6,150	6,262	6,541	7,530	7,936	5,580	6,788	82,858
McNEIL:													
Daily average	110	125	114	99	100	100	89	76	91	56	60	95	
Month	3,410	3,500	3,534	2,970	3,100	3,000	2,759	2,356	2,730	1,736	1,800	2,956	33,851
MIDWAY:													
Daily average	.....	.....	.....	.....	60	50	139	307	454	534	543	431	
Month	.....	.....	.....	.....	1,860	1,500	4,309	9,517	13,620	16,554	16,290	13,376	77,026
MT. LUCAS:													
Daily average	140	126	156	110	91	91	136	137	138	115	82	83	
Month	4,340	3,528	4,836	3,300	2,821	2,730	4,216	4,247	4,140	3,565	2,460	2,573	42,756
NORTH PETTUS:													
Daily average	2,385	2,020	2,087	2,295	1,869	1,699	1,772	1,799	1,663	1,616	1,487	1,606	
Month	73,935	56,560	64,697	68,850	57,939	50,970	54,932	55,769	49,870	50,096	44,610	49,794	678,042
PETTUS:													
Daily average	1,135	1,051	1,106	1,147	1,270	1,179	997	994	910	865	758	900	
Month	35,185	29,428	34,286	34,410	39,370	35,370	30,907	30,814	27,300	26,815	22,740	27,907	374,532
PLACEDO:													
Daily average	6,934	7,354	7,997	7,978	7,973	7,024	8,351	8,834	8,915	10,226	8,554	8,483	
Month	214,954	205,912	247,907	239,340	247,163	210,720	258,881	273,854	267,450	317,006	256,620	262,971	3,002,778
PLUMMER:													
Daily average	51	8	8	7	35	69	67	217	268	250	253	278	
Month	1,581	224	248	210	1,085	2,079	2,077	6,727	8,040	7,750	7,590	8,633	46,235
PLYMOUTH:													
Daily average	11,831	13,302	13,780	13,233	13,498	12,925	13,867	14,271	14,405	14,150	15,235	14,499	
Month	366,761	372,456	427,180	396,990	418,438	387,750	429,877	442,401	432,150	438,650	457,050	449,484	5,019,187
PORT LAVACA:													
Daily average	370	340	380	340	258	212	156	123	102	102	91	136	
Month	11,470	9,520	11,780	10,200	7,998	6,360	4,836	3,813	3,060	3,162	2,730	4,207	79,136
PREMONT:													
Daily average	16	78	600	955	1,484	1,483	1,366	1,334	1,129	1,053	613	926	
Month	496	2,184	18,600	28,650	46,004	44,490	42,346	41,354	33,870	32,643	18,390	28,710	337,737
RAY:													
Daily average	1,632	1,421	1,487	1,585	1,340	1,256	938	877	729	625	543	578	
Month	50,592	39,788	46,097	47,550	41,540	37,680	29,078	27,187	21,870	19,375	16,290	17,926	394,973
REFUGIO:													
Daily average	5,520	7,083	6,250	7,056	5,550	6,082	6,302	7,525	6,742	6,038	5,469	5,087	
Month	171,120	198,324	193,750	211,680	172,050	182,460	195,362	233,275	202,260	187,178	164,070	157,703	2,269,232
SAXET:													
Daily average	23,586	29,491	32,223	32,089	35,611	36,923	35,602	37,993	40,925	41,434	41,405	44,045	
Month	731,166	825,748	998,913	962,670	1,103,941	1,107,690	1,103,662	1,177,783	1,227,750	1,284,454	1,242,150	711,666	12,477,593
SAXET HEIGHTS:													
Daily average	9,553	10,199	9,598	9,271	9,642	9,440	7,461	6,935	6,497	5,720	5,312	7,327	
Month	296,143	285,572	297,538	278,130	298,902	283,200	231,291	214,985	194,910	177,320	159,360	227,137	2,944,488
SEVIER:													
Daily average	965	1,157	1,137	1,201	1,133	976	944	2,104	1,265	1,181	955	970	
Month	29,915	32,396	35,247	36,030	35,123	29,280	29,264	65,224	37,950	36,611	28,650	30,072	425,762
TAFT:													
Daily average	2,519	3,493	3,791	3,824	3,867	3,586	3,586	3,806	3,545	3,290	2,757	2,621	
Month	78,089	97,804	117,521	114,720	119,877	107,580	111,166	117,986	106,350	101,990	82,710	81,251	1,237,044
TOMOCONNOR:													
Daily average	5,432	9,679	12,439	10,392	12,290	11,467	12,998	17,589	15,662	15,902	12,279	11,657	
Month	168,392	271,012	385,609	311,760	380,990	344,010	402,938	545,259	469,860	492,962	368,370	361,366	4,502,528
WEST TULETA:													
Daily average	717	797	895	777	777	742	496	568	591	543	626	597	
Month	22,227	22,316	27,745	24,450	24,087	22,260	15,376	17,608	17,730	16,833	18,780	18,506	247,918
VOSS:													
Daily average	325	275	275	271	146	130	53	43	36	32	39	69	
Month	10,075	7,700	8,525	8,130	4,526	3,900	1,643	1,333	1,080	992	1,170	2,129	51,203
SOUTH BURNELL:													
Daily average	.....	.....	.....	.....	.....	.....	24	234	809	1,446	979	880	
Month	.....	.....	.....	.....	.....	.....	744	7,254	24,270	44,826	29,370	27,286	133,750
Daily average	101,280	117,264	124,829	121,855	127,752	124,814	76,003	92,708	92,633	85,788	82,878	84,698	102,558
Total 1937	3,139,680	3,283,392	3,869,699	3,655,650	3,960,312	3,744,420	2,356,087	2,873,948	2,778,990	2,659,427	2,486,340	2,625,625	37,433,570
Total 1936	1,616,375	1,592,825	1,868,618	1,963,140	2,169,907	2,159,400	2,263,899	2,374,662	2,489,190	2,714,422	2,518,449	2,766,750	26,497,637
Total 1935	855,662	792,344	930,062	896,310	961,961	925,230	1,089,429	1,059,580	1,087,290	1,248,835	1,403,722	1,417,847	12,668,272

Pools not listed and their total production in 1937 were: Chapman Ranch, 30,127 bbls.; Dinero, 2,753 bbls.; Foley, 18,348 bbls.; Fort Merrill, 3,419 bbls.; Grayburg, 1,260 bbls.; Kingsville, 26,650 bbls.; La Sal Vieja, 4,734 bbls.; Lamar, 150 bbls.; Normanna, 10,367 bbls.; North McFaddin, 2,670 bbls.; Oakville, 11,837 bbls.; Rutledge, 5,449 bbls.; Sinton, 12,592 bbls.; South Clara Driscoll, 6,902 bbls.; Stratton, 20,437 bbls.; Strauch, 11,334 bbls.; White Point, 20,474 bbls.; Sandia, 15,061 bbls.; Slick, 18,373 bbls.; Weser, 1,565 bbls.; East Premont, 700 bbls.; Richard King, 1,600 bbls.; total, 214,468 bbls.

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- These three Eagle Bearing Metals are made of the best grades of refined primary metals. Toughness and structure are uniform always. They contain no hard spots to cut and score the shaft . . . they will not grip or weld to the shaft if bearings become heated . . . they will conform to shaft irregularities.

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from a screen setting at 7,189-7,208 feet, the well flowed 22 bbls. of 27-gravity oil per hour through a three-sixteenths inch choke. The company has completed one additional producer in a new sand at 7,200 feet and is engaged in drilling a fifth test. Three previous tests were dry.

The Quarantine Bay field, Plaquemines Parish, was opened in November by Gulf Oil Corp. No. 3 State, section 17-19s-17e. Production is from a screen in the Miocene sand at 8,144-8,204 feet. It flowed 845 bbls. of 36-gravity oil per day through a quarter-inch choke. Additional sands are expected to be developed as a second sand section was logged at 6,464-72 feet.

Cook Mountain Discovery

One of the most important strikes, which is expected to have much bearing on future exploration, was the opening of the Villa Platte field in Evangeline Parish. The discovery was made in September by Continental Oil Co. No. 1 Tate, section 44-3s-2e. Production was obtained through perforated casing at 9,007-35 feet. It flowed 265 bbls. of 52.4-gravity oil per day through various chokes. It opened production from the Sparta member of the Cook Mountain formation, a new producing horizon, which is expected to result in a general trend play extending along the Conroe trend from the Texas side through the northern tier of parishes.

In southeastern Jefferson Parish, Shell Petroleum Corp. No. 1 Joe Sturdivant in April opened distillate production at South Roanoke at a plugged-back depth of 8,558 feet. It flowed 46 bbls. of distillate through a 9/64-inch choke. The well is in section 25-10s-4w.

Two deep-seated fields were opened in Terrebonne Parish. In the southeastern part of the parish, on the north flank of the old Houma gas field, section 23-19s-19e, Humble Oil & Refining Co. opened the Lirette field in May with No. 1 H. J. Ellender, originally completed in the Miocene sand at 11,610-15 feet as the world's deepest producer. It made an initial flow of 37 bbls. of 36-gravity oil per hour through a quarter-inch choke and flowed at this rate for several days. Salt water intrusion later ruined it and it was completed as a distillate producer through perforated casing at 10,520-24 feet. About 14 miles west of Houma and 4 miles south of the town of Gibson, Shell Petroleum Corp. discovered the Gibson field with No. 1-B Realty. The Miocene sand was topped at 9,483 feet and the hole was cored to 9,493 feet, where it flowed an initial production of 873 bbls. per day through a quarter-inch choke. The discovery well was completed February 26. Location is in section 19-17s-15e.

The Big Lake field, Cameron Parish, discovered as a distillate field in 1936 by Magnolia Petroleum Co., was converted into an oil field by Union Sulphur Co. No. 1 J. O. Hebert, a half mile east of the discovery well. Perforations were made at 8,312-16 feet, and it flowed 500 bbls. per day through a quarter-inch choke. Sand was found several hundred feet lower than the discovery well which was completed at 7,900-66 feet. Magnolia Petroleum Co. farmed out its holdings to the above company after drilling 4 dry holes.

The South Elton field, Jefferson Davis Parish, was proven for distillate production by Stanolind Oil & Gas

LOUISIANA GULF COAST

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
ANSE LA BUTTE:													
Daily average	54	45	166	207	731	258	173	175	175	184	255	442	
Month	1,674	1,260	5,146	6,210	7,161	7,740	5,363	5,425	5,250	5,704	7,650	13,703	72,286
BAYOU MALLET:													
Daily average	249	252	275	222	226	233	230	244	99	61	13	4	
Month	7,719	7,056	8,525	6,660	7,006	6,990	7,130	7,564	2,970	1,891	390	112	64,013
BAYOU DES ALLEMANDS:													
Daily average	.....	.....	.....	.....	.....	.....	217	221	194	405	315	142	
Month	.....	.....	.....	.....	.....	.....	6,727	6,851	5,820	12,555	9,450	4,416	45,819
BAYOU SALE (Horseshoe Bayou):													
Daily average	.....	.....	.....	.....	.....	.....	.....	561	477	515	460	455	
Month	.....	.....	.....	.....	.....	.....	.....	17,391	14,310	15,965	13,800	14,120	75,586
BAY ST. ELAINE:													
Daily average	.....	.....	.....	.....	.....	.....	.....	448	383	326	269	226	
Month	.....	.....	.....	.....	.....	.....	.....	13,888	11,490	10,106	8,070	7,015	50,569
BIG LAKE:													
Daily average	.....	2	6	6	191	250	202	74	160	153	140	128	
Month	.....	56	186	180	5,921	7,500	6,262	2,294	4,800	4,743	4,200	3,968	40,110
BLACK BAYOU:													
Daily average	3,590	3,730	3,753	3,926	3,751	3,828	3,302	3,551	3,307	3,447	3,498	3,854	
Month	111,290	104,440	116,343	117,780	116,281	114,840	102,362	110,081	99,210	106,857	104,940	119,459	1,323,883
BOSCO:													
Daily average	9,906	9,360	9,236	9,101	9,054	9,159	8,547	7,911	7,339	6,819	6,733	6,567	
Month	307,086	262,180	286,316	273,030	280,674	274,770	264,957	245,241	220,170	211,389	201,990	203,567	3,031,370
CAILLOU ISLAND:													
Daily average	16,523	17,502	17,494	17,498	17,537	17,463	17,420	17,998	18,000	18,000	15,470	15,925	
Month	512,213	490,056	542,314	524,940	543,647	523,890	540,020	557,938	558,000	558,000	464,100	493,682	6,290,800

(Continued on Next Page)

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Co. and Amerada Petroleum Corp. No. 2-B Calcasieu National Bank, section 28-7s-3w. The hole was drilled to 9,851 feet and was completed at a plugged back depth of 8,967 feet for an initial production of 2½ bbls. of distillate per hour through a three-eighths inch choke. Perforations were made at 8,955-65 feet. The discovery was made August 29.

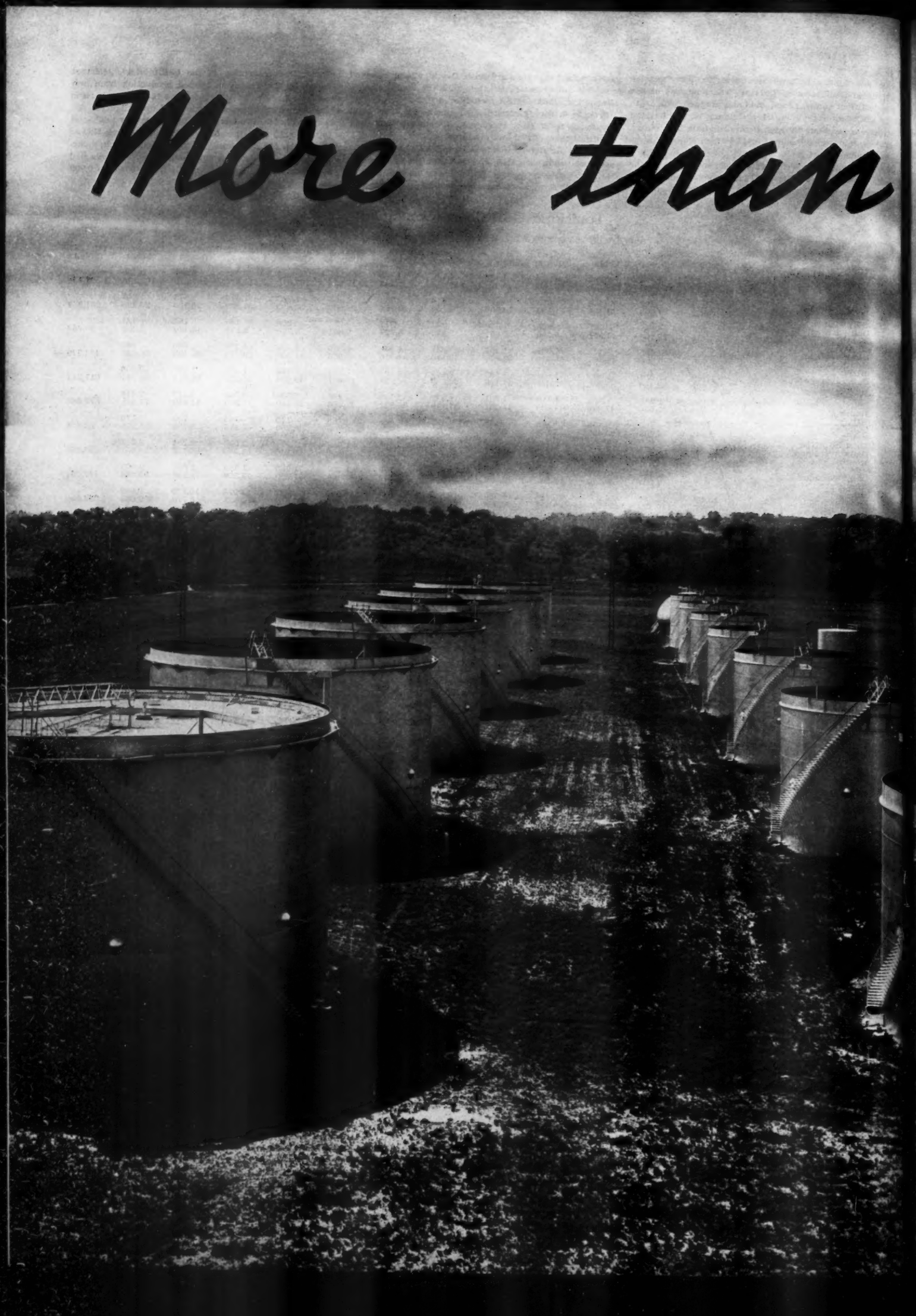
New sand discoveries were made in several of the older fields including Bay St. Elaine, Terrebonne Parish, Jeannerette and Charenton in St. Mary Parish and the Lafitte field in Jefferson Parish, Bay St. Elaine received its first important production with the completion of Texas Co. No. 1 State which flowed 972 bbls. per day through a three-sixteenths-inch choke from a total depth of 5,632 feet. Production heretofore had been confined to one 2,700 foot producer.

In the Jeanerette field, Herton Oil Co. opened 10,000-foot production with No. 1 Banta Roanes, section 401. Perforations were made in the casing at 10,412-24 feet and it flowed 225 bbls. of oil and 15 per cent salt water. Deeper drilling in the Lafitte field, Jefferson Parish by the Texas Co. opened production from new sands at 8,100 and 10,000 feet. The 10,000 foot horizon was opened with the completion of No. 5 Rigoletts, section 29-17s-24e. Production is from a screen setting at 10,159-10,250 feet, the total depth and the well flowed 1,549 bbls. per day through a three-eighths-inch choke. Previous to the time of this completion, all wells had been completed in various depths from 9,300 to 9,900 feet.

Louisiana Gulf Coast (Continued)

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
CAMERON MEADOWS:													
Daily average	4,522	4,450	4,392	4,277	4,809	4,712	4,160	3,768	3,587	3,781	3,589	3,426	
Month	140,182	124,600	136,152	128,310	149,079	141,360	128,960	116,808	107,610	117,211	107,670	106,196	1,504,138
CHARENTON:													
Daily average	222	282	458	370	428	472	748	856	1,023	1,017	873	848	
Month	6,882	7,896	14,198	11,100	13,268	14,160	23,188	26,536	30,690	31,527	26,190	26,299	231,934
CHENEYVILLE:													
Daily average	465	435	381	325	250	247	217	221	209	165	182	181	
Month	14,415	12,100	11,811	9,750	7,751	7,410	6,727	6,851	6,270	5,115	5,460	5,603	99,263
CHOCTAW:													
Daily average	1,250	1,093	1,115	1,224	1,257	1,337	1,336	1,356	1,392	1,270	980	988	
Month	38,750	30,604	34,565	36,720	38,967	40,110	41,416	42,036	41,760	39,370	29,400	30,628	444,326
DARROW:													
Daily average	1,709	1,910	1,805	1,654	1,843	2,121	1,491	1,481	1,540	1,491	1,267	2,258	
Month	52,979	39,480	55,955	49,620	57,133	63,630	46,221	45,911	46,200	46,221	38,010	69,984	611,344
DOG LAKE:													
Daily average	1,154	1,202	1,519	1,518	1,331	1,237	1,791	2,496	2,528	2,500	2,487	2,416	
Month	35,774	33,656	47,089	47,058	41,261	37,110	55,521	77,376	75,840	77,500	74,610	74,885	677,680
EDGERLY:													
Daily average	182	186	176	176	175	167	159	168	175	165	190	170	
Month	5,642	5,208	5,456	5,280	5,425	5,010	4,929	5,208	5,250	5,115	5,700	5,255	63,478
GARDEN ISLAND:													
Daily average	1,249	875	1,601	1,437	1,281	1,739	1,669	1,532	1,977	2,000	2,204	2,392	
Month	38,719	24,500	49,631	43,110	39,711	52,170	51,739	47,492	59,910	62,000	66,120	74,151	609,253
GIBSON:													
Daily average	.....	283	912	662	720	750	779	1,399	1,263	1,599	2,605	3,003	
Month	.....	7,924	28,272	19,860	22,320	22,500	24,149	43,369	37,890	49,569	78,150	93,084	427,087
GILLIS:													
Daily average	16,403	15,344	14,637	16,480	15,580	15,937	13,887	13,403	13,327	12,018	10,559	9,699	
Month	508,493	429,632	453,747	494,400	482,980	478,110	430,497	415,493	399,810	372,558	316,770	300,666	5,083,156
GUEYDAN:													
Daily average	95	112	268	209	264	287	287	328	285	316	382	382	
Month	2,945	3,136	8,308	6,268	8,184	8,610	8,897	10,168	8,550	9,796	11,460	11,851	98,173
HACKBERRY (EAST):													
Daily average	8,855	9,407	10,168	9,675	8,962	8,672	8,777	8,965	8,483	8,472	8,634	8,233	
Month	274,505	263,396	305,208	290,247	277,822	260,160	272,087	277,915	254,490	262,632	259,020	255,214	3,252,696
HACKBERRY (OLD):													
Daily average	1,608	2,447	2,876	2,332	4,646	5,396	5,738	4,490	3,946	3,776	3,028	3,103	
Month	49,848	68,516	89,156	69,960	144,026	161,880	177,878	139,190	118,380	117,056	90,840	96,178	1,322,908
IOWA:													
Daily average	17,563	17,161	18,101	17,947	14,087	16,933	17,667	17,591	17,360	16,837	17,089	16,380	
Month	544,453	480,508	561,131	538,410	436,697	507,990	547,677	555,321	520,800	521,947	512,670	507,777	6,235,381
JEANERETTE:													
Daily average	4,250	4,600	5,723	5,400	5,767	6,090	6,684	7,000	6,578	6,796	6,909	7,087	
Month	131,750	128,800	177,413	162,000	178,777	182,700	207,204	217,000	197,340	210,676	207,270	219,711	2,220,641
JENNINGS:													
Daily average	3,464	3,535	4,201	4,578	5,160	5,487	8,442	9,909	11,069	10,616	14,624	15,529	
Month	97,384	98,980	130,231	137,340	159,960	164,610	261,702	307,179	348,270	329,096	438,720	481,400	2,954,872
LAFITTE:													
Daily average	8,926	11,551	11,559	11,463	10,809	11,384	11,128	11,502	11,500	11,500	11,060	11,987	
Month	276,706	323,428	348,329	343,890	365,079	341,520	344,968	356,562	345,000	356,500	331,800	371,611	4,105,393
LAKE BARRE:													
Daily average	5,351	7,746	7,750	5,908	4,675	4,518	4,094	3,486	2,822	2,742	2,503	2,358	
Month	165,881	215,888	240,250	177,240	144,925	135,540	126,914	108,066	84,660	85,002	75,090	73,099	1,632,555
LAKE LONG:													
Daily average	.....	.....	.....	.....	.....	.....	647	456	416	385	367	376	
Month	.....	.....	.....	.....	.....	.....	20,057	14,136	12,480	11,935	11,010	11,664	81,282
LAKE PELTO:													
Daily average	406	496	501	609	612	615	385	1,464	1,517	1,500	1,248	1,264	
Month	12,586	12,888	15,531	18,270	18,972	18,450	11,935	45,384	45,510	46,500	37,440	39,182	322,648
LAKE WASHINGTON:													
Daily average	1,353	1,354	1,534	1,509	1,502	1,438	1,003	1,000	979	306	918	947	
Month	41,943	37,912	47,554	45,268	46,502	43,140	31,093	31,000	29,370	9,486	27,540	29,362	420,170
LEESVILLE:													
Daily average	11,882	12,301	10,050	8,926	8,779	9,673	7,256	7,229	7,084	6,180	5,094	6,179	
Month	368,342	344,428	311,550	267,780	272,149	290,190	219,936	224,099	212,520	191,580	178,020	191,546	3,072,140
LOCKPORT:													
Daily average	1,544	1,555	1,463	1,276	1,358	1,537	1,390	1,585	1,441	473	1,448	1,223	
Month	47,864	43,540	45,353	38,280	42,036	46,110	43,090	49,135	43,230	14,663	43,440	37,913	494,654
NEW IBERIA:													
Daily average	11,767	19,337	20,097	22,700	17,485	16,185	14,602	15,010	14,530	14,147	14,928	14,650	
Month	364,777	541,436	623,007	681,000	542,035	485,550	452,662	465,310	435,900	438,557	447,840	454,138	5,932,212
PORT BARRE:													
Daily average	1,912	2,016	1,094	2,228	1,647	1,867	1,662	1,549	1,523	1,427	1,320	1 196	
Month	59,272	56,448	59,954	66,840	51,057	56,010	51,522	48,019	45,690	44,237	39,600	37,088	615,737
ROANOKE:													
Daily average	5,877	6,112	6,097	5,882	5,220	5,182	4,996	4,637	4,247	4,505	4,914	5,050	
Month	182,187	171,136	189,007	176,460	161,820	155,460	154,876	143,747	127,410	139,655	147,420	156,560	1,905,738
SORRENTO:													
Daily average	244	248	233	209	197	199	185	178	174	161	158	167	
Month	7,564	5,944	7,223	6,270	6,107	5,970	5,735	5,518	5,220	4,991	4,740	5,182	70,464
STARKS:													
Daily average	515	457	539	489	575	587	568	796	704	737	700	615	
Month	15,965	12,796	16,709	14,670	17,925	17,610	17,608	24,676	21,120	22,847	21,000	19,074	222,000
ST. MARTINSVILLE:													
Daily average	292	242	204	221	656	731	734	800	785	791	788	786	
Month	9,052	6,776	6,324	6,630	20,336	21,930	22,754	24,800	23,550	24,521	23,640	24,370	214,683
SULPHUR:													
Daily average	4,266	3,990	4,223	4,145	4,781	4,822	3,958	3,381	3,614	3,161	3,073	3,176	
Month	132,246	111,720	130,913	124,350	148,211	144,660	122,698	104,811	108,420	97,991	92,190	98,451	1,416,661
SWEET LAKE:													
Daily average	915	909	874	820	601	798	800	799	761	721	721	731	
Month	28,365	25,452	27,094	24,600	18,631	23,940	24,800	24,769	22,831	22,351	21,630	22,672	287,134
TEPETATE:													
Daily average	5,437	5,684	5,800	5,831	5,679	6,513	5,876	5,879	6,185	5,723	5,789	5,769	
Month	168,547	159,152	179,800	147,930	176,049	195,390	182,156	182,249	185,550	177,413	173,670	178,841	2,133,747
VALENTINE:													
Daily average	491	550	830	1,071	1,513	1,896	3,244	3,501	3,767	4,506	4,885	5,276	
Month	15,221	15,400	25,730	35,130	46,903	56,880	102,564	108,531	113,010	139,686	146,550	163,560	969,165
VENICE:													
Daily average	.....	.....	.....	.....	.....	.....	175	873	943	1,043	1,081	1,340	
Month	.....	.....	.....	.....	.....	.....	5,425	27,063	28,290	32,333	32,430	41,542	167,083
VINTON:													
Daily average	1,472	1,360	1,441	1,407	1,471	1,316	1,313	1,312	1,208	1,250	1,300	1,297	
Month	45,632	38,080	44,671	42,210	45,601	39,480	40,703	40,672	36,240	38,750	39,000	40,207	491,246
WELCH:													
Daily average	35	35	35	35	35	34	32	29	29	28	28	35	
Month	1,085	980	1,085	1,050	1,085	1,020	992	899	870	868	840	1,075	11,849
WHITE CASTLE:													
Daily average	1,660	1,560	1,287	1,156	1,237	1,259	1,188	1,271	1,303	1,267	1,538	1,466	
Month	51,460	43,680	39,897	34,680	38,347	37,770	36,828	39,401	39,090	39,277	46,140	45,457	492,027
Daily average	157,432	171,239	175,218	125,379	167,634	173,825	169,415	167,385	171,237	165,478	168,462	170,720	169,407
Total 1937	4,880,436	4,794,688	5,431,753	5,261,381	5,196,656	5,214,750	5,251,872	5,188,929	5,137,110	5,129,818	5,053,860	5,292,326	61,833,579
Total 1936	4,043,578	3,820,866	4,235,096	4,285,110	4,963,751	4,452,300	4,616,003	4,657,248	4,592,690	4,679,786	4,754,451	4,956,916	54,057,795
Total 1935	2,682,926	2,589,328	2,974,822	3,040,855	3,395,668	3,460,110	3,654,559	3,677,561	3,629,250	3,846,015	3,819,960	3,886,377	40,657,131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ANY tank skillfully fabricated and erected from steel plates of the proper thickness is a good tank *when empty*. But to merit the same classification when in service, additional qualifications are necessary. This fact has long been recognized by our engineers in designing and developing products for use in the oil industry. Without exception, every unit illustrated on this page has been conceived and built to meet certain specific service requirements commonly encountered in the field. As a result, you can now find in the Horton line exactly the right solution for virtually any storage or handling problem.

THE WIGGINS PONTOON ROOF is used the world over as standard equipment for all working tanks handling products that do not boil at ordinary atmospheric pressures.

THE WIGGINS BREATHER ROOF is seldom matched for the high returns it pays on standing storage tanks above 60 ft. in diameter that are kept full or nearly full most of the time.

THE WIGGINS BALLOON ROOF is a new unit which now makes the breather roof principle both practical and profitable for smaller standing storage tanks and for tanks that are not always kept filled.

THE WIGGINS BALLOON is a larger unit designed to serve as a central gas-holder in vapor saving systems serving groups of tanks through inter-connected gas-tight piping.

THE HORTONSPHERE is a modern pressure storage container available in capacities of 1,000 to 12,500 bbls. for pressures of from 25 to 100 lb. per sq. in. or higher.

THE HORTONSPHEROID is widely used as a pressure storage unit for pressures up to 25 lb. per sq. in. It is also becoming increasingly useful in large sizes for handling high test motor fuels at pressures from 2½ to 5 pounds per sq. in.

We will be glad to give you complete information about any or all of these products. Please address our nearest office.

The picture at the left shows a group of tanks at a gasoline pipe line terminal. In the row at the left are four 27,500-bbl. and two 55,000-bbl. units equipped with Wiggins Pontoon Roofs of the latest type. At the right are seven new 10,000-bbl. Wiggins Pontoon Roof tanks and one 10,000-bbl. Hortonspheroid in the background.

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Dallas	1441 Liberty Bank Building	Cleveland	2204 Rockefeller Building
Houston	2919 Main Street	New York	3347-165 Broadway Building
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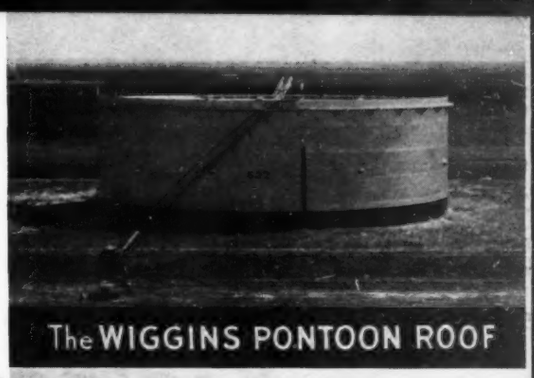
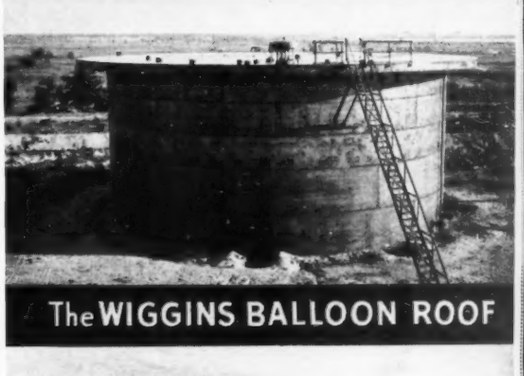
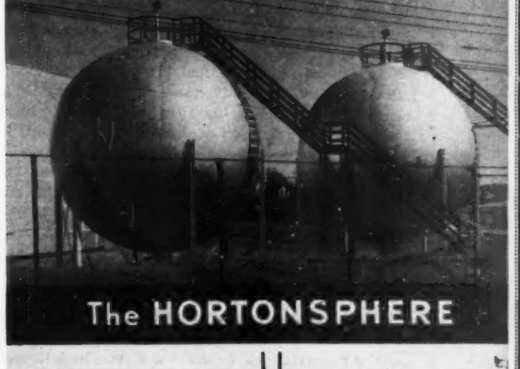
Chicago	2128 Old Colony Building	San Francisco	1054 Rialto Building
Detroit	1514 Lafayette Building	Los Angeles	1423 Wm. Fox Building

Fabricating Plants at BIRMINGHAM, CHICAGO, and GREENVILLE, PA.







Northern Oriskany Sand Area Yields Big Gas Producers

By J. P. O'DONNELL

COUDERSPORT, Pa.—From the standpoint of completions, drilling operations in the deep sand gas fields of Northern Pennsylvania and Southwestern New York during 1937 were about on a par with those of 1936. Sixty-eight wells, 22 of which were wildcat tests, were completed in 1937 against 65 completions, including the same number of wildcats, in 1936. The 1937 completions included 42 producing wells and 26 dry holes. In 1936 45 producing wells were completed and 20 were dry holes.

From the standpoint of new production, however, results varied greatly. While an extension to the Tioga field was the outstanding development of 1936, the new Woodhull field of Steuben County, New York, was discovered in 1937 together with eastward and westward extensions to the Sabinsville field of Tioga County, Pennsylvania.

The combined initial open flow of the 42 producing wells drilled in 1937 was less than 550,000,000 cubic feet, a substantial reduction from the total of 687,000,000 feet for the 45 producers completed in 1936. The average initial open flow of the producing wells completed last year was about 2,000,000 feet under the average of the previous year. In 1936 a 50,000,000-foot well in the Sabinsville and a number of 30,000,000-foot wells in the State Line field were completed and were unequalled by any of the producers completed last year.

Woodhull's New Field

The discovery and subsequent development of the Woodhull field in Woodhull Township, south central Steuben County, New York, six miles north of the New York-Pennsylvania state line, was, of course, the outstanding development of the year in the two-state area.

The discovery well was completed May 25 by Atwater & Southwestern Development Co. The well had an initial open flow of 18,000,000 feet, an initial rock pressure of 1,960 pounds and was completed to a total depth of 3,856 feet, one foot in the Oriskany sand. The field is a dome closure on the Van Etten anticline with a northeast, southwest axis similar to other Oriskany pools in this area.

Upon the completion of seismographic surveys a number of other wells were spudded in and by the end of the year 19, all producers, had been completed. Initial open flows ranged from a low of 3,700,000 feet to a high of 28,000,000 feet. This rapid development, stimulated by unusually good drilling conditions, has already pretty well defined the southwestern limits of the field. If the development of the northeastern limits corresponds to expectations, the pool will have an extent of approximately 6,000 acres and will be the largest of the eight Oriskany sand pools opened in this area in the present decade. The last previous field to be opened was the Sabinsville field in western Tioga County, discovered in 1935.

The 19 Woodhull wells had a combined initial open flow of 316,880,000 feet, accounting for the bulk of the new production developed in 1937. All the pipe line construction work in 1937 was centered in connecting lines, most of them six-inch, to the new field. These lines were laid by Southwestern Development Co., G. L. Cabot, Inc., New York State Natural Gas Co., Hanley & Bird, Belmont Quadrangle Drilling Co., and Sylvania Corp. The combined length of these six lines is approximately 60 miles.

Other developments of interest were two extensions to the Sabinsville field in Tioga County. Both were drilled by the New York State Natural Gas Co. This company's L. J. Roberts farm test in Clymer Township, good for 3,000,000 feet, extended the field eastward and its test on the A. W. Leonard farm in Westfield Township, good for 4,800,000 feet, extended the pool westward. Both extensions approximated one mile.

New production was also developed in Troupsburg Township, Steuben County, northeast of the Harrison field. Sylvania Corp. completed a well on the Hendrickson farm that found the Oriskany at 5,106 feet with an initial open flow of 1,000,000 feet. It had an initial rock pressure of 2,160 pounds. Two other tests were drilling in this area at the close of the year.

A well drilled by the Moss Syndicate on the Moss farm in Howard Township, Steuben County, also found gas in the Oriskany which it reached at 3,576 feet. It produced 200,000 feet after shot.

Further development of the Harrison field in Potter County accounted for 97,500,000 feet of new production and gave this field second rank in development work for 1937. Eleven wells were completed in the field, 10 of which were producers.

The State Line field of Allegany County, N. Y., ranked third with three producers in four tests and 57,400,000 feet; the Sabinsville field of Tioga County, Pa., fourth with three producers and 34,800,000 feet; the Ellisburg field of Potter County, Pa., fifth with

NEW YORK

Operator and farm—	Township	Top of Oriskany	Total depth	Initial R.P.	Production
Steuben County:					
Moss Syndicate, T. E. Moss	Howard	3,576	3,600	....	200,000
Belmont Quadrangle Drlg., L. D. Clark	Greenwood	4,758	4,763	1,760	15,000,000
G. L. Cabot, Inc., T. H. Wing	Greenwood	4,179	4,193	....	S.W.
Atwater-Southwestern, Herrington	Woodhull	3,955	3,956	1,960	18,000,000
Sylvania Corp., Hendrickson	Troupsburg	5,106	5,123	2,160	1,000,000
Belmont Quadrangle Drlg., Clara Lynch	Hartsville	4,715	4,719	....	S.W.
Belmont Quadrangle Drlg., C. Bottinger	Jasper	4,191	4,205	....	S.W.
New York State Nat'l. Gas, E. Calkins	Woodhull	4,025	4,036	1,940	26,000,000
S. J. Brendel, E. H. Ackerman	Woodhull	4,123	4,137	1,912	12,000,000
G. L. Cabot, Inc., C. Calkins	Woodhull	4,019	4,020	....	20,000,000
Becker, C. Calkins	Woodhull	4,005	4,007	....	17,000,000
Cunningham, N. Phelps	Addison	3,820	3,829	....	S.W.
Hanley & Bird, Moyer	Woodhull	3,944	3,953	....	27,000,000
Clancey et al, Bates 1-A	Woodhull	3,856	3,858	1,910	14,000,000
Sylvania Corp., H. Hand	Woodhull	3,987	4,000	....	22,000,000
Sylvania Corp., A. H. Tuttle	Woodhull	3,882	3,885	....	25,000,000
G. L. Cabot, Inc., R. C. Towsley	Woodhull	3,905	3,909	....	28,000,000
New York State Nat'l. Gas, H. J. Tubbs	Woodhull	3,864	3,875	1,875	10,480,000
G. L. Cabot, Inc., C. Groves	Woodhull	4,166	4,180	1,680	3,700,000
Hanley & Bird, J. Lobeck	Woodhull	4,110	4,122	1,630	22,600,000
Belmont Quadrangle Drlg., L. S. Johnson	Woodhull	4,029	4,039	....	8,000,000
Cunningham, J. J. Johnson	Woodhull	3,977	3,995	....	6,000,000
Hanley & Bird, E. H. Ackerman No. 1	Woodhull	4,026	4,040	1,500	12,600,000
Backer, Fred Sly	Woodhull	4,071	4,085	....	20,000,000
New York State Nat'l. Gas, C. L. Bonham	Woodhull	3,987	4,004	....	5,000,000
New York State Nat'l. Gas, Charles Finch	Woodhull	4,019	4,034	1,710	19,500,000
Allegany County:					
Wittmer, Terwilliger	Angelica	3,987	4,027	....	D. & A.
G. L. Cabot, Inc., Leo Harder	Alma	4,681	4,694	1,540	27,000,000
Empire Gas & Fuel Co., K. Mulvey	Alma	4,675	4,683	1,400	22,000,000
Kaufman et al (†), Bank Angelica	Allen	3,380	5,001	....	D. & A.
Fairman et al, C. Wilson	Willing	4,984	4,991	....	S.W.
G. L. Cabot, Inc., T. Murphy	Alma	4,713	4,721	1,110	8,400,000
Schuyler County:					
Belmont Quadrangle Drlg., L. Washburn	Catherine	N.S.	2,142	....	D. & A.
Belmont Quadrangle Drlg., Federal Land Bank	Dix	N.S.	2,201	....	D. & A.
Southwestern Dev. Co., Shearer	Dix	2,284	2,340	....	D. & A.
Cattaraugus County:					
Belmont Quadrangle Drlg., M. Rideout	Leon	(*)	3,812	....	D. & A.
Belmont Quadrangle Drlg., A. G. Hoffler	Leon	....	4,745	....	D. & A.
Cunningham, H. Hotchkiss	Randolph	(†)	4,765	....	D. & A.

PENNSYLVANIA

Potter County:					
French et al, U. B. Russell	Genesee	5,505	5,507	....	S.W.
Sylvania Corp., I. Kibbee	Harrison	4,925	4,958	....	700,000
New York State Nat'l. Gas, J. Saxton	Harrison	4,794	4,808	1,980	20,500,000
Potter Development Co., L. C. English	Harrison	5,100	5,110	1,870	11,000,000
Ward Wasson, W. B. Hall	Genesee	5,372	5,387	....	7,000,000
G. L. Cabot, Inc., R. E. Courtwright	Harrison	5,002	5,012	1,870	12,000,000
New York State Nat'l. Gas, L. Schofield	Harrison	5,085	5,100	1,585	13,800,000
French et al, George Burd	Allegany	5,267	5,288	....	8,000,000
G. L. Cabot, Inc., A. Bean	Harrison	4,880	4,890	....	S.W.
Penn York, M. Reynolds	Harrison	4,928	4,946	1,500	2,400,000
Potter Development Co., Ida Scoville	Harrison	5,228	5,241	1,445	7,600,000
G. L. Cabot, Inc., R. Johnson	Bingham	5,227	5,245	915	6,000,000
Pennsylvania Power & Light, G. M. Whitman	Harrison	5,056	5,067	1,270	14,000,000
New York State Nat'l. Gas, A. D. Marble	Harrison	5,064	5,075	1,200	8,200,000
New York State Nat'l. Gas, A. Schofield No. 2	Harrison	4,962	4,976	1,210	7,300,000
Tioga County:					
New York State Nat'l. Gas, O. Burnside No. 2	Clymer	4,437	4,439	1,780	27,000,000
Potter Development Co., C. G. Dearman	Middlebury	4,415	4,418	....	S.W.
G. L. Cabot, Inc., Union Joint Bank	Brookfield	....	5,195	....	D. & A.
Potter Development Co., H. C. Kemp. No. 2 (‖)	Farmington	4,455	4,525	....	D. & A.
New York State Nat'l. Gas, L. J. Roberts	Clymer	4,576	4,586	1,300	3,000,000
Potter Development Co., C. Learn (**)	Farmington	4,066	4,105	....	740,000
G. L. Cabot, Inc., A. J. Pride	Westfield	4,965	4,981	1,105	D. & A.
New York State Nat'l. Gas, A. W. Leonard	Westfield	4,582	4,593	1,025	4,800,000
Warren County:					
Potter Development Co., D. Spetz	Pittsfield	(‡)	5,165	....	D. & A.
Sylvania Corp., M. W. Jamieson	Kinzua	4,796	4,823	....	S.W.
Potter Development Co., Lessor-Launer	Kinzua	4,711	4,928	....	D. & A.
Belmont Quadrangle Drlg., Lot 487	Pleasant	4,294	4,370	....	D. & A.
Crawford County:					
Potter Development Co., J. Chaplin (§)	Rockdale	3,025	4,354	....	D. & A.
Potter Development Co., N. D. Dahl	Hayfield	3,118	4,522	....	D. & A.
McKean County:					
H. C. Drilling Co., Van Scoy	Hamilton	4,750	4,770	....	S.W.

*No Oriskany; Red Medina, 3,674 feet; White Medina, 3,789-3,807 feet. †Red Medina, 4,605 feet. ‡Red Medina, 4,961-5,086 feet; White Medina, 5,126-5,137 feet. §No Oriskany; Red Medina, 4,118 feet; White Medina, 4,280-92 feet. ‖Red Medina, 4,804 feet. ¶Fault. **Deepened old hole.

three producers in four tests and 21,000,000 feet; the Greenwood pool of Steuben County, N. Y., sixth with one producer in two tests and 15,000,000 feet, and the old Tioga field in Tioga County, Pa., seventh with one producer in two tests and 740,000 feet.

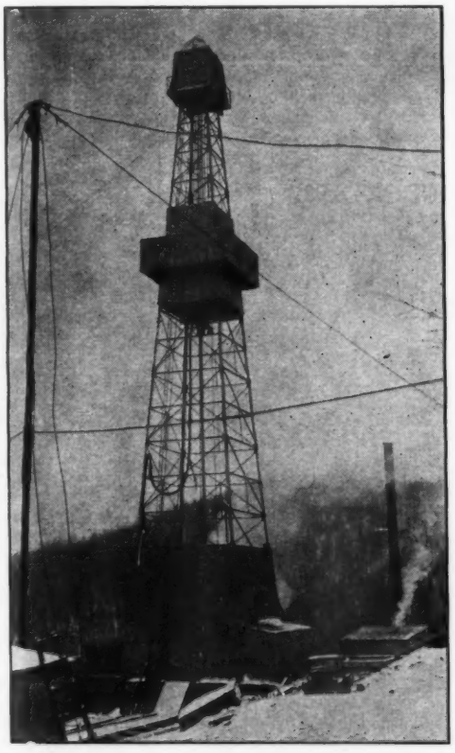
The balance of the new production was from the two wildcat tests in Howard and Troupsburg Townships, Steuben County, totaling 1,200,000 feet.

A summary of operations by fields follows:

New York: Field	Comp.	Gassers	Dry	Initial Prod. in cu. ft.
Woodhull	19	19	0	316,880,000
State Line	4	3	1	57,400,000
Greenwood	2	1	1	15,000,000
Leon	2	0	2	.....
Wildcats	11	2	9	1,200,000
Totals	38	25	13	390,450,000

Pennsylvania: Field	Comp.	Gassers	Dry	Initial Prod. in cu. ft.
Harrison	11	10	1	97,500,000
Sabinsville	3	3	0	34,800,000
Ellisburg	4	3	1	21,000,000
Tioga	2	1	1	740,000
Wildcats	10	0	10	.....
Totals	30	17	13	154,040,000
All fields	68	42	26	544,520,000

The best well completed in these fields during the year was that of G. L. Cabot, Inc., on the R. C. Towsley farm in Woodhull which had an initial open flow of 28,000,000 feet. Three 27,000,000-foot wells were drilled, one each in the Woodhull, State Line and Sabinsville fields by Hanley & Bird, G. L. Cabot, Inc., and New York



Rotary rig of Potter Development Co. on Medina sand test at Keating Summit, Potter County, Pennsylvania

State Natural Gas Co. respectively, and 26,000,000 and 25,000,000-foot wells were completed in the Woodhull field by New York State Natural Gas Co. and Sylvania Corp. Four other 20,000,000-foot wells were drilled in the Woodhull field and one in the Harrison field. These contrasted with the one 50,000,000 and half dozen 30,000,000-foot leading wells of 1936.

Wildcatting last year was substantially more successful than in 1936. Besides opening the Woodhull field, wildcats found new production in Troupsburg and Howard Townships, Steuben County.

A wildcat drilled by the H. C. Drilling Co. on the Van Scoy farm in Hamilton Township, western McKean County, the first Oriskany test in that immediate area, struck a flow of 3,500,000 feet in the 18 feet of Oriskany sand at 4,750-68 feet. This flow was cut to several hundred thousand feet, however, when salt water developed and it was plugged back to make a shallow oil producer when it was decided that producing it as a gas well would be unprofitable.

Six wildcats, including the Woodhull field discovery well were drilled in Steuben County, two in Allegany County, three in Schuyler County and one in Cattaraugus County, all in New York, and three in Tioga County, four in Warren County, two in Crawford County, and one in McKean County, Pennsylvania. Wildcats tested not only the Oriskany but also the deeper Medina in Allegany, Cattaraugus, Schuyler, Warren and Crawford counties.

At the end of the year wildcats were drilling in Keating and West Branch townships, Potter County; Elk and Watson townships, Warren County; in Rockland Township, Venango County, and in Montour Township, Schuyler County. The two Potter County tests, both being drilled by the Potter Development Co., found the Oriskany sand dry and will be deepened to the Medina.

An interesting feature of the year was the introduction of rotary drilling in the East. Potter Development Co. is employing the first heavy-duty deep well rotary ever used in these fields to deepen its wildcat at Keating Summit, Keating Township, Potter County. Developments at this test are being watched closely by other operators considering the addition of rotary rigs to their equipment. This test will be drilled to the Medina, productive of oil and gas in Ohio and gas in New York but dry in the several tests drilled thus far in Pennsylvania. Nearest Medina gas production is in the Leon pool in Cattaraugus County, New York, between 50 and 60 miles to the northwest.

Tests were drilling to the Oriskany in the Woodhull and Troupsburg areas at the close of the year. In addition to the further development of the new productive areas opened in 1937, a widespread wildcatting campaign is scheduled for this district in 1938, according to several of the major operators.

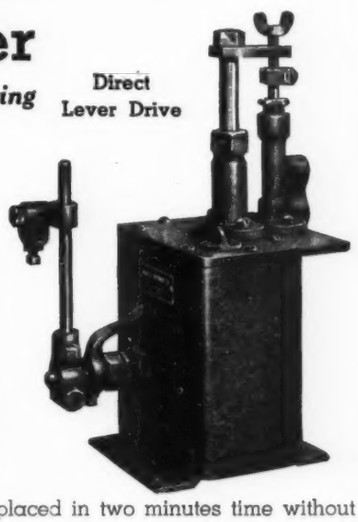
Appended tabulated data were compiled from the weekly scout reports. They show the name of the operator, farm, township, county, field, production and total depth of all wells completed and the elevation, top of the Onondaga, top of the Oriskany, and initial rock pressure of those given in the weekly reports.

MANZEL

SERIES "60"

Chemical Feeder

For Positively Measuring and Delivering Just the Right Amount of Chemical When Treating Oil



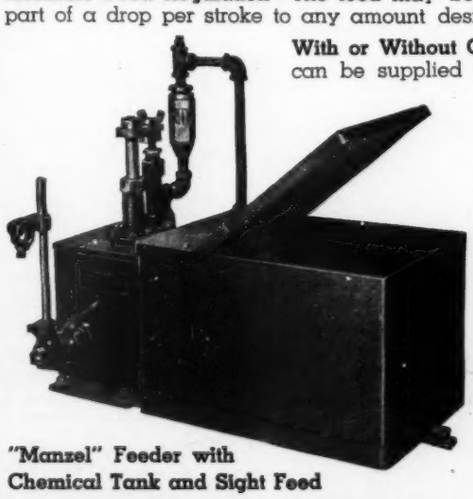
Direct Lever Drive

Feeds the chemical into the line in exact proportion to the amount of oil being pumped. Will deliver small or large amounts with unfailing regularity. The entire driving mechanism is enclosed in an oil tight case (filled with heavy oil at the factory) and operates in a bath of oil at all times.

The pumping unit, the only part that comes in contact with the chemical, is a simple single plunger pump, with packed stuffing box on plunger, and adjustable plunger stroke permitting of very accurate regulation. It is arranged on the outside of the feeder body where it is readily accessible and may be taken out, repaired or replaced in two minutes time without dismantling the feeder.

Piston Valve Action—No ball valves are used, the pumping unit being fitted with the "Manzel" Patented Piston Valve which has been found to be the most satisfactory type for handling treating chemicals. There is but a single valve which acts as both suction and discharge valve. It has a taper as well as a sliding seat and handles the heaviest chemical most efficiently.

Accurate Feed Regulation—The feed may be adjusted to supply from a fractional part of a drop per stroke to any amount desired.



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With or Without Chemical Reservoir—"Manzel" Feeders can be supplied with or without three-gallon chemical container. The container has a large hinged cover for quick filling, and is provided with a stainless steel gauge (graduated in quarts) also with a large strainer which does not interfere with filling.

Sight Feeds—When desired, "Manzel" Feeders can be supplied with sight feeds to show the amount of chemical being pumped.

Made with ratchet, rotary, direct lever or electric motor drive.

FOR SALE BY ALL DEALERS

Write for Bulletin 60-B giving full details

Manzel Brothers Company

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Annual Review

EXTENSIVE EXPLORATION OF TRINITY SERIES BORE SMALL RESULTS

By MITCHELL TUCKER

Although many important wildcat wells were drilled into the Trinity series in 1937, the results were disappointing without exception. Three new producing areas in the Woodbine sand were opened during the year, one each in Falls, Henderson and Houston counties. None of these, however, showed sufficient potentiality to warrant any rapid development.

The East Texas field proper remained the country's most active drilling area the entire year, during which time a total of 3,361 producing wells were completed, bringing the total oil wells for that field to 24,267 at the close of 1937. With the addition of these wells, many of which were edge wells on either the east, north or west sides of the field, approximately 5,000 productive acres were added to the field.

Opelika Discovery

The Tide Water Associated Oil Co., Seaboard Oil Co. and Humble Oil & Refining Co. opened the Opelika structure of northeastern Henderson County to production on lands of McElreath & Suggett in the W. P. Wyche Survey. The discovery well topped what appeared to be a prolific pay horizon in the Trinity late in April, and drilled the section at 7,185-95 feet. Difficulties were encountered in removing the drill pipe from this depth, and it was cemented 35 feet above the bottom of the hole, with rock bit on bottom. As a result, adequate production tests were impossible in the lower level and the well was plugged back and completed as a small producer in the Lower Glen Rose. Drilling operations were immediately begun on No. 2 McElreath & Suggett, which went to a total depth of 9,320 feet without logging the showings obtained in the original well. After testing all intervening horizons No. 2 was plugged back to 8,038 feet and completed as a 9,000,000 foot gas well, making approximately 240 bbls. of distillate per day. The well is still in the testing stage as the year closes.

Percilla Discovery

Early in May, Placid Oil Co. (H. L. Hunt) opened a gas-distillate producer known as the Percilla field, on the J. E. Elliott farm in the J. Procella Survey, 5 miles northwest of Grapeland in northeastern Houston County. It was drilled into the Lower Woodbine to a total depth of 6,634 feet and plugged back to 5,960 feet for a test of gas and oil showings from 5,872-83 feet. On production tests the well gauged 77 bbls. of distillate in 24 hours through 22/64-inch tubing choke, with about 15,000,000 feet of gas. This well was drilled on acreage farmed out by Shell Petroleum Corp. which retained a large surrounding block. No further development has been made in the Percilla field. The Grapeland area was formerly opened to gas production in 1936 by American Liberty Oil Co. but the Percilla field three miles to the northwest is considered a separate structure.

Flag Lake

The Flag Lake field of northwestern Henderson County was opened to Woodbine sand production late in November by McMillan & Hunt in their No. 1 A. R. Dillard, in the H. Jeffries Survey near the town of Toole. After drilling to a depth of 6,518 feet and finding all deep horizons barren, the hole was plugged back and casing perforated in the Woodbine at 3,093-3,103

EAST CENTRAL TEXAS FIELDS DISCOVERED DURING 1937

Field—	County	Discovery well	Date of completion	No. wells comp. to date	Well spacing	Initial producing capacity — Bbls.	Test	Size choke or tbg.
Collinsville	Grayson	Denver Prod. & Ref. Co. No. 1 Singleterry	4- 1-37	1	150-300	57	24 hrs.	Pump. 2¼" W. bbl.
Bolivar	Denton	A. A. Lander, Inc., No. 1 Forrester	4- 7-37	2	150-300	66	24 hrs.	Pump. 2" W. bbl.
Lott	Falls	Bell & Hayes No. 1 Trice	3- 2-37	2	150-300	32	24 hrs.	Pump. ¾" W. bbl.
Opelika	Henderson	No official completion report filed to date.						

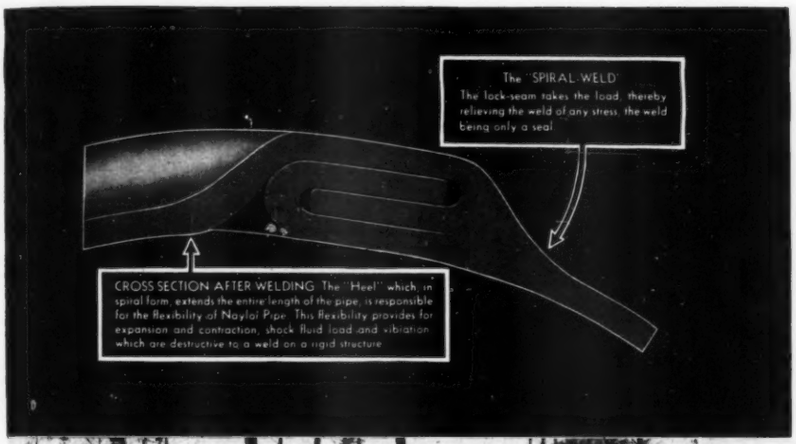
EAST CENTRAL TEXAS

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
CORSICANA (SHALLOW):													
Daily average	395	440	447	447	470	439	445	434	441	448	417	421	
Month	12,238	12,308	13,868	13,397	14,562	13,169	13,798	13,468	13,225	13,903	12,502	13,051	159,489
CURRIE:													
Daily average	127	128	127	119	120	118	120	119	112	117	113	114	
Month	3,930	3,570	3,951	3,562	3,726	3,551	3,710	3,684	3,655	3,623	3,379	3,528	43,869
MEXIA:													
Daily average	1,916	1,976	1,951	1,954	1,929	1,926	1,914	1,914	1,944	1,909	1,897	1,894	
Month	59,408	55,329	60,495	58,607	59,789	57,787	59,348	59,346	58,305	59,189	56,921	58,721	703,245
POWELL:													
Daily average	2,104	2,166	2,226	2,229	2,214	2,213	2,082	2,165	2,165	2,150	2,137	2,141	
Month	65,215	60,656	69,007	66,861	68,644	66,402	64,546	67,103	64,939	66,651	64,118	66,380	790,522
SULPHUR BLUFF:													
Daily average	1,837	2,669	3,336	4,046	4,336	4,876	4,690	5,837	6,271	6,485	6,408	6,213	
Month	56,961	74,729	103,401	121,387	134,423	146,273	145,382	180,960	188,128	201,050	192,241	192,612	1,737,547
VAN:													
Daily average	34,177	35,597	36,678	34,891	37,036	31,111	34,239	39,967	28,911	24,644	21,034	19,218	
Month	1,059,489	996,726	1,137,010	1,046,718	1,148,120	933,330	1,061,394	1,238,968	867,338	763,950	631,012	595,770	11,479,825
BOGGY CREEK:													
Daily average	504	476	436	431	440	414	391	403	395	361	339	340	
Month	15,635	13,337	13,520	12,942	13,652	12,418	12,110	12,498	11,849	11,193	10,179	10,549	149,882
CAMP HILL:													
Daily average	169	159	148	114	92	89	59	29	15	7	.....	.....	
Month	5,250	4,464	4,589	3,421	2,854	2,674	1,840	896	444	204	.....	.....	26,636
CAYUGA:													
Daily average	7,490	7,608	7,711	7,616	7,899	9,048	8,601	8,898	8,785	9,039	10,392	10,721	
Month	232,177	213,026	239,030	228,485	244,875	271,439	266,639	275,851	263,560	280,217	311,754	332,353	3,159,406
LONG LAKE:													
Daily average	1,113	1,146	1,172	1,218	1,400	1,942	1,455	1,535	1,728	1,639	1,565	1,602	
Month	34,514	32,097	36,319	36,544	43,401	58,270	45,098	47,581	51,841	50,821	46,936	49,671	533,093
POTTER:													
Daily average	65	74	121	139	61	129	95	97	106	88	94	90	
Month	2,000	2,064	3,736	4,156	1,879	3,870	2,930	2,999	3,182	2,714	2,830	2,784	35,144
RODESSA (Cass County):													
Daily average	38,934	37,921	43,395	40,371	41,753	40,969	37,104	38,289	32,705	28,068	20,442	18,712	
Month	1,206,958	1,061,797	1,345,238	1,211,116	1,294,371	1,229,077	1,150,228	1,186,944	981,160	870,102	613,253	580,062	12,730,306
RUSK:													
Daily average	175	174	175	67	95	129	135	87	87	94	94	92	
Month	5,425	4,872	5,425	2,015	2,956	3,882	4,200	2,699	2,615	2,913	2,830	2,860	42,692
TALCO:													
Daily average	15,140	17,345	22,073	22,904	26,686	31,416	29,939	33,367	29,961	32,381	32,104	32,310	
Month	469,349	485,657	684,271	687,122	827,266	942,483	928,103	1,034,388	898,833	1,003,807	963,129	1,001,616	9,926,024
TRINITY:													
Daily average	1,064	1,062	1,079	911	1,023	1,016	964	954	862	850	879	860	
Month	32,976	29,729	33,446	27,339	31,722	30,473	29,892	29,565	25,868	26,364	26,364	26,671	350,409
MISCELLANEOUS:*													
Daily average	263	266	235	262	276	237	289	352	399	404	441	454	
Month	8,162	7,449	7,294	7,854	8,571	7,097	8,944	10,903	11,978	12,514	13,237	14,085	118,088
Daily average	105,474	109,208	121,312	117,718	125,833	126,083	122,563	134,447	114,897	108,712	98,356	95,184	115,033
Total 1937	3,269,687	3,057,810	3,760,600	3,531,526	3,900,811	3,782,195	3,798,162	4,167,853	3,446,920	3,370,061	2,950,685	2,950,713	41,987,023
Total 1936	1,379,138	1,383,241	1,513,836	1,529,814	1,636,711	1,592,121	1,764,106	1,930,376	1,976,086	2,298,220	2,208,872	2,738,771	21,941,292
Total 1935	1,598,825	1,439,129	1,597,656	1,463,460	1,480,095	1,444,800	1,521,598	1,441,482	1,444,861	1,436,003	1,397,957	1,546,794	17,812,660
Total 1934	1,337,450	1,207,167	1,353,109	1,418,875	1,570,523	1,607,163	1,560,476	1,605,503	1,558,617	1,346,688	1,297,730	1,427,468	17,290,769
Total 1933	1,510,082	1,651,962	1,833,473	1,768,931	1,824,829	1,749,086	1,807,796	1,820,568	1,541,010	1,400,332	1,304,066	1,340,406	19,552,541

Miscellaneous fields and their production, in bbls., for 1937 were: Lott, 5,686; Post Oak, 1,110; Pottsboro, 1,688; Richland, 6,244; South Bosque, 4,531; Wortham, 32,130; Grapeland, 580; Flag Lake, 3,727; Percilla, 9,091; Ginter, 2,954; Huntington, 4,133; Panola, 16,812; Shelbyville, 3,346; Waskom, 18,827; Bolivar, 2,251; Collinsville, 3,497; Nacogdoches, 481; total, 118,088 bbls.

NAYLOR IS THE ONLY PIPE TO GIVE THESE BENEFITS


The "SPIRAL-WELD"
The lock-seam takes the load, thereby relieving the weld of any stress, the weld being only a seal.
CROSS SECTION AFTER WELDING The "Heel" which, in spiral form, extends the entire length of the pipe, is responsible for the flexibility of Naylor Pipe. This flexibility provides for expansion and contraction, shock fluid load and vibration which are destructive to a weld on a rigid structure.

There's a big difference between Naylor Pipe and all other pipe. Only Naylor offers you the performance factors of the Lockseam Spiralweld Structure illustrated at the left . . . It's this exclusive Naylor Structure that produces light weight, greater structural strength, unrivaled flexibility and the "expansion joint" Safety Feature that protects your lines and couplings by absorbing shock loads, vibration, expansion and contraction . . . Naylor does not rely on the weld to hold the Structure together. The Lockseam carries this load and the Spiralweld seals the pipe . . . Accurate diameter and concentric ends that always match correctly speed up jointing and insure a better field welding job . . . As a result, Naylor Pipe saves time and money, makes installed cost cheaper and insures performance factors not obtainable in any other pipe. For complete details and prices, call us or our distributors.

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NAYLOR PIPE COMPANY • CHICAGO, ILLINOIS

EAST TEXAS FIELDS DISCOVERED DURING 1937

Field—	County	Discovery well	Date of completion	No. wells comp. to date	Well spacing	Initial producing capacity— Bbls.	Test	Size choke
Flag Lake	Henderson	McMillan & Hunt No. 1 A. R. Dillard	11-15-37	1	150-300	128	24 hrs.	12/64" choke
Percilla	Houston	Placid Oil Co. No. 1 Elliott	5-10-37	1	150-300	77	24 hrs.	22/64" choke
Rodessa	Marion	Thomason Drilling Co. No. 1 Henderson	2- 7-37	..	466-933	101	24 hrs.	1/32" choke

EAST TEXAS

Daily Average and Monthly Production in 1937

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1937 (bbls.)
JOINER:													
Daily average	149,237	150,350	151,612	152,350	153,087	153,977	153,351	154,012	155,470	156,937	151,638	141,237	
Month	4,626,347	4,219,800	4,722,850	4,570,500	4,745,697	4,619,310	4,753,881	4,774,372	4,664,100	4,865,047	4,549,140	4,378,347	55,489,391
KILGORE:													
Daily average	138,950	134,200	140,750	140,937	143,137	144,362	143,925	144,725	146,122	147,512	143,013	133,787	
Month	4,307,450	3,757,600	4,363,250	4,228,110	4,375,247	4,330,860	4,461,675	4,486,475	4,383,660	4,572,872	4,290,390	4,147,397	51,704,986
LONGVIEW:													
Daily average	162,077	166,862	168,225	169,685	170,550	172,075	178,852	173,175	175,248	177,263	172,075	160,688	
Month	5,024,387	4,672,136	5,214,975	5,090,550	5,287,050	5,162,250	5,327,412	5,368,425	5,257,440	5,495,153	5,162,250	4,981,328	62,043,356
Daily average	450,264	451,769	461,325	462,972	464,774	470,414	469,128	471,912	476,840	481,712	466,726	435,712	463,665
Total 1937	13,958,184	12,649,536	14,301,075	13,889,160	14,407,994	14,112,420	14,542,968	14,629,272	14,305,200	14,933,072	14,001,780	13,507,072	169,237,733
Total 1936	14,238,858	13,743,390	14,409,358	14,328,360	14,524,368	13,821,780	13,084,004	13,229,980	12,953,268	13,486,434	13,171,740	13,797,333	164,788,873
Total 1935	14,257,675	13,804,392	15,318,960	14,130,960	14,954,958	15,143,970	15,160,550	15,064,450	14,461,230	14,698,774	14,139,840	13,937,414	175,073,173
Total 1934	13,982,092	13,168,462	15,642,196	15,261,750	15,867,946	16,730,673	16,979,822	15,131,623	15,720,130	13,928,703	12,920,388	13,166,626	178,500,411
Total 1933	10,459,555	10,641,574	17,355,872	10,916,250	31,322,545	22,908,640	20,691,805	18,707,144	16,679,634	16,273,911	13,423,719	13,488,691	202,869,340

feet. Following preliminary testing, official gauge showed 128 bbls. of high gravity oil through 12/64-inch choke in 24 hours. This new producing area lies north of the trend of other Woodbine fault line fields of East Central Texas.

Talco Field

Disappointing tests of the Lower Trinity on the east side of the Talco field in Titus and Franklin counties were made during the year. Efforts for a three-mile western extension of the Paluxy pay were unsuccessful after coring and drilling to a total depth of 4,310 feet and finding only noncommercial showings of heavy oil in the Lower Paluxy.

Sulphur Bluff Tests

Efforts to extend the Paluxy production 2½ miles north of the Sulphur Bluff field by Abbott & Ruthlands in their No. 1 Peyton, J. Burkham Survey, were unsuccessful in the latter part of the year. As the year closed, Walter Goldston was making a deep test of the Trinity series at his No. 10 H. J. Smith, situated near the peak of the structure, and which made unattractive yields from the Paluxy level.

Wildcat Failures

Early in the year Superior Oil Co. of California abandoned a deep Trinity test on its large Quinlan block, Hunt County. Shortly thereafter Stanolind Oil & Gas Co. test at Campbell, northeastern part of the same county, was drilled through the Glen Rose and Paluxy without results. Humble Oil & Refining Co. abandoned an important Trinity test in eastern Rains County at 8,484 feet. American Liberty Oil Co. drilled a dry Trinity hole on the southeast edge of the Van field in Van Zandt County. Tom Hunter and American Liberty found the Blackfoot area of Anderson County dry in the Trinity series, and abandoned the hole in June of 1937. About the same time Tide Water Associated Oil Co. and Seaboard Oil Corp. abandoned the deepest hole ever drilled in East Texas, located on their Monnig block in the Sanchez Survey in the Long Lake field in southwestern Anderson County. It was drilled to a total depth of 9,971 feet and found the Paluxy, Glen Rose, Travis Peak and Lower Trinity dry. Roeser and Pendleton, Inc. of Ft. Worth made a deep test in the E. Ritter Survey on the west side of the Cayuga field without success, after drilling to a total depth of 7,682 feet. Humble Oil & Refining Co. drilled the third Trinity test of the Van field in Van Zandt County on the Riggs farm in the W. Daniels Survey, on the east flank of the Van structure, finding all beds dry to a depth of 5,695 feet.

Pure Oil Co. deep test of the Mexia field, No. 16 T. Kendrick, P. Varella Survey, drilled to a total depth of 8,847 feet in the Lower Marine Trinity without attractive showings. An impossible fishing job was encountered at this depth and prevented drilling deeper. The hole was abandoned in December, 1937.

As the year closed, wildcatting in the Trinity series in East Central Texas had reached a new low since it was stimulated about two years ago following the discovery of the Rodessa field and others nearby. Five such wildcat tests are now in the progress of drilling.

EAST CENTRAL AND EAST TEXAS

Completions for 1937—By Counties

County—	Comp.	Prod.	Dry	Gas
Anderson	71	3,964	10	15
Angelina	14	49	7	0
Bowie	4	0	4	0
Cherokee	8	50	6	0
Ellis	3	0	3	0
Falls	7	30	6	0
Fannin	3	0	3	0
Franklin	122	33,744	3	0
Freestone	11	1,172	7	0
Gregg	1,153	56,517	22	0
Henderson	46	5,409	3	2
Hill	1	5	0	0
Hopkins	69	23,057	8	0
Houston	6	105	2	2
Hunt	2	0	2	0
Lamar	4	0	4	0
Leon	1	0	1	0
Limestone	2	0	2	0
Morris	1	0	1	0
Nacogdoches	1	0	1	0
Navarro	2	5	1	0
Rains	1	0	1	0
Red River	6	0	6	0
Rusk	748	35,975	30	0
Smith	124	4,043	5	0
Titus	343	83,499	10	0
Upshur	305	10,248	16	0
Van Zandt	14	96	9	0
Wood	3	0	3	0
Total, 1937	3,075	257,968	176	19

Completions By Months For 1937

Month—	Comp.	Prod.	Dry	Gas
January	232	15,507	14	3
February	178	9,821	7	0
March	245	17,892	17	0
April	243	23,776	13	3
May	236	21,582	18	1
June	250	22,665	13	1
July	336	29,913	22	4
August	266	30,779	8	2
September	280	22,774	18	0
October	272	23,041	20	2
November	242	19,271	8	1
December	295	20,947	17	2
Total, 1937	3,075	157,968	176	19
Total, 1936	2,863	137,881	230	15
Difference	212	120,087	54	4

Dewey A. Jordan, superintendent, Atlantic Refining Co., Great Bend, Kans., was elected chairman of the recently organized western Kansas chapter of the American Petroleum Institute. Other officers are Henry Nething, Stanolind Oil & Gas Co., Ellinwood, first vice chairman; George Neylon, Conway-Owens Lumber Co., Hays, second vice chairman; Harry Glover, American Manufacturing Co., Ellinwood, secretary-treasurer.

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WESTERN CANADA'S BIG YEAR IN DISCOVERIES

By VICTOR LAURISTON

Preliminary official figures of Canadian petroleum production for 1937 show a marked increase over 1936. This was almost entirely due to the development of crude production in Alberta on the Turner Valley west flank. Comparative figures for the various provinces for 1936 and 1937 are as follows:

Province—	1936 bbls.	1937 bbls.
New Brunswick	18,377	22,481
Ontario	165,468	165,478
Alberta	1,320,442	2,745,015
Northwest territories	7,000	11,371
Total	1,511,287	2,944,345

Natural Gas Production

In natural gas production, the total for 1937 is estimated at 27,918,171,000 feet, compared with 27,075,343,000 feet in 1936. These totals do not include Turner Valley gas used for repressuring, or burned in the field. Detailed figures for the various provinces are as follows:

Province—	1936 feet	1937 feet
New Brunswick	596,000,000	576,988,000
Ontario	9,424,720,000	10,181,325,000
Alberta	16,658,217,000	17,066,664,000
Manitoba	600,000	600,000
Saskatchewan	215,000,000	92,614,000
Total	26,894,537,000	27,918,191,000

Alberta Fields

In Alberta, the Turner Valley field showed a marked increase in production, despite three successive and increasingly drastic measures of proration. This was due entirely to the rapid increase in crude production, the naphtha yield from the older wells steadily declining. Pipe line runs for 1936 and 1937 are as follows:

	1936 bbls.	1937 bbls.
January	79,127	101,856
February	74,146	115,818
March	76,687	133,216
April	76,615	149,467
May	75,980	148,066
June	79,479	162,071
July	101,392	195,134
August	98,454	232,557
September	94,077	234,941
October	95,756	281,576
November	93,208	282,908
December	98,117	.....
Total	1,040,036	.....

Proration of Turner Valley crude in 1937 became effective on a 65 per cent basis on September 12; on November 1, 45 per cent and November 15, 35 per cent.

Pipe line deliveries were supplemented by sales to small refining plants and consumers in the field.

Alberta government returns, with figures for December estimated, were as follows:

	1936 bbls.	1937 bbls.
Turner Valley, limestone production	1,274,119	2,705,206
Turner Valley, other production	13,119	10,620
Red Coulee-Border	17,937	13,723
Wainwright heavy crude	14,957	13,619
Skiff heavy crude	310	.....
Taber light crude	.....	600
Moose dome light crude	.....	600
Dina heavy crude	.....	647
Totals	1,320,442	2,745,015

With no new producers, the Alberta end of the international Red Coulee field showed a continued decline. Wainwright heavy crude production, though slightly smaller, maintains a fairly steady average, while the Ribstone-Dina area gives indications of a smaller development. The Taber and Moose dome areas are not yet in steady production.

Turner Valley

The most striking feature of 1937 has been the development on the west flank of South Turner Valley. A rapid succession of crude producers in this area has converted Turner Valley from a relatively minor factor in Alberta refining into a field which, even on a 35 per cent proration basis, has almost entirely displaced imported crudes in the prairie provinces. More, development now under way or planned for 1938 seems likely to establish this area as a major field, capable—if transportation problems can be solved—of supplying all Canada's needs and converting the dominion from an importing into an exporting country.

This west flank development began in June, 1936, when Turner Valley Royalties No. 1, LSD 13, section 28-18-2w5 came in with approximately 900 bbls. a day crude production from the Madison limestone, previously productive of wet gas and naphtha. The strike shifted drilling activity to the west flank. At the end of the year two additional but smaller producers had been completed bringing the aggregate crude production to approximately 1,500 bbls. a day. Proven production extended about 1½ miles north and south.

At the end of 1937, 24 additional crude producers had been completed, with individual potential production ranging from 100 to 4,493 bbls. The proven field extended from Sterling Pacific No. 3, LSD 13, section 33-18-2w5 on the north to Brown Oil Co. No. 1, LSD 14, section 16-18-2w5 on the south, a distance of approximately 3¼ miles; while Commoil No. 1, LSD 15, section 29-18-2w5 had proven the field almost a mile west of the most easterly crude producer. West flank drilling at the end of the year was in progress from North Turner Valley to Davies Petroleums No. 3, LSD 7, section

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CLEVELANDS

17-18-2w5, in the far south, though most of the drilling was concentrated in the area immediately west and south of the South Turner Valley field. Potential crude production aggregated over 30,000 bbls. a day, nearly 20 times the potential when the year began. Not a single dry hole was drilled on the west flank proper.

A significant feature was that Commoil No. 1, farthest down the west flank, finished the largest producer in the field, while Royal Canadian Oils No. 1 in LSD 15, section 20-18-2w5 and Sunset Oils No. 1, LSD 10, same section, also outlying wells, finished exceptionally large producers.

Production was increased by acidization, which during the year became a recognized practice in the west flank crude area. Results of acid treatment were most striking in the outlying wells. The usual practice is to acidize very shortly after completion.

The following is a summary of Turner Valley crude producers at the end of 1937:

Well	LSD	Section	Depth	Potential	Allowable
Sterling Pacific Nos. 3, 4, 5, 6		33-18-2w5	....	6,115	2,175
Royal Crest No. 1	9	32-18-2w5	7,114	552	193
West Flank No. 1	1	32-18-2w5	7,150	425	169
West Flank No. 3	8	32-18-2w5	....	....	....
‡Turner Valley No. 1	13	28-18-2w5	6,854	826	289
Four Star No. 1	13	28-18-2w5	7,150	682	238
Richland No. 3	14	28-18-2w5	6,060	100	100
Three Point No. 1	12	28-18-2w5	6,969	482	169
B. & B. No. 1	12	28-18-2w5	6,609	686	240
Model-Spooner No. 1	4	28-18-2w5	6,942	1,106	387
Granville Oils No. 1	16	29-18-2w5	7,318	500	175
Commoil No. 1	15	29-18-2w5	7,475	4,493	1,572
Share No. 1 N. ½	8	29-18-2w5	7,170	900	305
National Pet. No. 1 S. ½	8	29-18-2w5	7,220	1,200	1,200
Davies Pete No. 2	13	21-18-2w5	6,965	3,000	1,074
‡Foundation No. 1	5	21-18-2w5	6,474	660	231
West Side No. 1	3	21-18-2w5	6,374	409	143
Royal Canadian No. 1	15	20-18-2w5	7,416	931	325
Monarch No. 1	9	20-18-2w5	7,007	807	282
Brown Oil No. 2	8	20-18-2w5	6,997	670	234
Sunset Oils No. 1	10	20-18-2w5	7,475	1,000	350
Firestone No. 1	13	16-18-2w5	6,917	839	293
Brown Oil No. 1	14	16-18-2w5	6,817	1,864	646
Prairie No. 1	13	17-18-2w5	7,515	2,058	720
‡Century No. 1	14	28-18-2w5	....	69	69
‡Model Nos. 1, 2, 3		22-20-3w5	....	165	165
Totals				30,539	11,774

‡Completed before 1937.
Several of the above wells are not yet acidized.

Record Deep Test

East of Turner Valley, Arca Development Corp. No. 1, NW section 24-18-1w5 established a new deep drilling record for Canada of 8,991 feet, getting the Madison limestone at 8,756 feet, with water in the producing horizon and non-commercial shows in the Dalhousie and upper lime. It was abandoned.

Moose Dome Producer

In the foothills outside Turner Valley, the most important development was the getting of a small commercial production in Moose Oils No. 2 LSD 8, section 29-22-6w5. Light crude with some gas was encountered in the Devonian limestone at 1,553 feet, with a small pumping production.

Taber Producers

Production in the Taber field was practically proven by two wells drilled by Plains Petroleum Corp. of Toronto. Plains No. 1, LSD 14, section 29-9-17w4, got initial production in a stray, known as the Clancey sand, at 3,190 feet, but later was deepened to the Ellis. Plains No. 2, LSD 11, section 25-9-17w4, got the Clancey sand around 3,200 feet with good showings, but was also carried deeper, finishing in the Ellis with potential production estimated at 60 bbls. a day.

East Central Alberta

The most important development in East Central Alberta was completion of Battleview Oils No. 1, NW section 32-47-5w4 on the Battleview anticline as a large gasser, estimated 50,000,000 feet a day, at 1,894 feet depth.

Operations in Ontario

Development work in Ontario was confined largely to drilling for gas. The most important feature was the intensive development of the Brownsville field, opened in 1936 in Dereham Township, Oxford County, and this year extended southeast into Bayham Township, Elgin County. During the year, 41 producing wells were drilled, with 7 dry holes; the producers representing an aggregate open flow of 81,623,000 feet a day.

Pipe Line Construction in 1937 Was Confined Mostly to Short Lines

The fact that most of the oil discoveries of 1937 were made in areas not far from trunk pipe line systems did not make necessary the construction of long pipe line systems such as were built in the early days of the West Texas and western Kansas districts, but many comparatively short lines were laid in the oil states west of the Mississippi and in Illinois and Michigan.

WEST, NORTH AND EAST TEXAS

The addition of Gaines, Yoakum and Hockley counties to production in the northern part of the Permian Basin of West Texas necessitated the extension of old lines into the new field, and it was in this territory that the greatest new work was done.

The Texas-New Mexico Pipe Line Co. completed a reconditioning and repowering project on their trunk line from southeastern New Mexico and West Texas to Houston, and added 40 miles of looping between Jal, N. Mex., and Monahans, Tex., together with three new pumping stations.

Humble Pipe Line Co. laid 30 miles of 6-inch from its New Mexico system, starting near Hobbs, into Gaines, Yoakum and Cochran counties. The line connected with the Seminole, Duggan, Bennett, Denver and Wasson fields, providing all of them their first pipe line outlet.

Gulf Pipe Line Co. laid about 20 miles of 6-inch line from the Sand Hills field in western Crane County to connect with its main line from Crane Station to Midland. Shell Pipe Line Co. also connected into the field from its Winkler-McCamey line. Both of these lines were laid into the old Sand Hills field (formerly a shallow field) to care for the increased production obtained from the Ordovician level.

The Mason Pipe Line Co. (Michigan Oil & Gas Co.) constructed about 18 miles of 6-inch line from the Mason field, discovered in northwestern Loving County, Texas, south to the Pastexo Pipe Line Co.'s trunk line to El Paso.

The Avoca field was discovered in about midyear in northeastern Jones County, and was without a pipe line outlet. Important extensions and new completions induced Humble Pipe Line Co. to begin construction of an 8-inch carrier line running diagonally across the country from the Panhandle to their Eastland County booster station at Canyn. Work was progressing as the year closed. The line will provide outlets to the Avoca, Lewis, Higgs, Sandy Ridge, Guitar and Hawley fields of West Central Texas.

GULF COAST—SOUTHWEST TEXAS

An oil line was recently placed in operation by the Standard Oil Co. of Louisiana which completed 150 miles of a combination 6-, 8- and 10-inch welded line from the company's refinery at Baton Rouge, connecting the Roanoke, Jeanerette and Jennings fields. Three miles of a 4-inch feeder line was laid from the line to the North Crowley field in Acadia Parish.

Continental Oil Co. completed a 12-mile 6-inch welded oil from the Jennings field to the company's terminal at Lake Charles. From its Satsuma station, Humble Oil & Refining Co. laid 39 miles of 8-inch welded gas line to its Baytown refinery.

American Petroleum Co. laid 15 miles of 6-inch welded oil line from the Spurger field in northeastern Tyler County to the Silsbee field in Hardin County where it ties into Atlantic Refining Co. main trunk line.

Humble Pipe Line Co. laid 21½ miles of 6-inch welded pipe from the Heyser field in Calhoun County to Refugio, where it ties into the company's main trunk line. From Webster Station, Brazoria County, Stanolind Pipe Line Co. completed 20 miles of 8-inch to Texas City, while from the Hastings field, Pan American Pipe Line Co. completed 20 miles of 6-inch welded pipe to its refinery at Texas City.

Sinclair Prairie Pipe Line Co. completed 8 miles of 4-inch welded line from the Sandy Point field in Brazoria County to its main trunk line from Damon Mound located north of the field.

Humble Pipe Line Co. completed 20½ miles of 8-inch welded line from the Anahuac field to its Baytown refinery and laid 8 miles of 6-inch welded line from Wallisville to Anahuac.

Texas Pipe Line Co. laid 16 miles of 8-inch welded loop line from the Lafitte field in Jefferson Parish to its tank farm near New Orleans.

From the New Iberia field, Iberia Parish, Texas Pipe Line Co. completed 15 miles of 4-inch to a deep-water loading barge on the Intracoastal Canal.

SOUTHWEST TEXAS

A record number of new discoveries together with the construction of several large terminals at Corpus Christi, resulted in much pipe line construction work for the Southwest Texas district.

Duval Pipe Line Co. completed a 70-mile 6-inch welded oil line from the Benavides field in Duval County to terminal facilities of the Associated Republic Pipe Line Co. at Corpus Christi.

Magnolia Pipe Line Co. laid an 85-mile 8-inch spur from its main trunk line at Tilden to Corpus Christi, providing an outlet to deep water transportation for Mirando crude.

Barnsdall Pipe Line Co. completed a 70-mile 6-inch welded oil line from the Placedo field in Victoria County to its terminal and refinery at Corpus Christi.

Humble Pipe Line Co. completed 18½ miles of 4- and 8-inch lines from the Flour Bluff field in Nueces County to a booster station at Viola. Thirty-two miles of 6-inch line was laid from the Pearsall field in Frio County to the Humble West Texas trunk line into Ingleside, giving that field its first pipe line outlet to deep water. Four miles of 4-inch was laid from the main line at Benavides to the North Sweden field in Duval County, and looped the lines at Benavides and Viola.

The Crude Oil Pipe Line Co. extended its system with the construction of 33 miles of 4-inch from the O'Hern field of Webb and Duval counties to the company's field station in the Loma Novia field.

Texas Pipe Line Co. laid 7 miles of 6-inch into the London field, Nueces County. From the Alta Mesa field, Brooks County, Standard Oil Co. of Texas laid a short 3-inch line to a loading rack on the Southern Pacific Railroad.

Amsco Pipe Line Co. completed 12 miles of 4-inch from the Luby field, Nueces County, to its Clarkwood pump station which connects to the company's terminal on the Corpus Christi ship channel.

E. M. Jones completed a 12-mile oil line from the Ezzell field of McMullen County to a railroad loading rack near Kittie.

OKLAHOMA

Shell Petroleum Corp. expanded its pipe line facilities from Cushing, Okla., to St. Louis, Mo., laying 75 miles of 10-inch line connecting existing loops. A 5-mile loop of 8-inch pipe around its booster station at Orlando, Payne County, was laid by Continental Pipe Line Co.

Other lines laid during the year included: Cities Service Co. line at Cushing, 7 miles of 8-inch; Continental Pipe Line Co., 16 miles of 6-inch from the Crescent pool to Guthrie, Logan County; same company, 5.5 miles of 4-inch line from Orlando to Lucien, Noble County; Sinclair Prairie Pipe Line Co., 20 miles of welded line from Fitts pool, Pontotoc County, to the main line at Nella; Anderson-Prichard Oil Corp., 12 miles of 4-inch line from Moore, Cleveland County, to Oklahoma City.

Pure Oil Co., 14 miles of 4-inch, Edmond to Oklahoma City; Cities Service Oil Co., 55 miles of 12-inch from the Fitts field; Oklahoma Pipe Line Co., 10.5 miles of 6-inch from the Moore field; Pure Oil Co., 12 miles of 6-inch in the Okmulgee area; Oklahoma Pipe Line Co., 12.25 miles of 8-inch in the Little River area, Seminole County, and 5.1 miles of 6-inch from Sulphur Bluff to Roff, Pontotoc County.

KANSAS

A 47-mile loop extending eastward from Louisburg, Miami County, into Missouri, one phase of the Panhandle Eastern Pipe Line Co.'s looping project in Oklahoma, Kansas, Missouri and Illinois, was completed in July. Olson Oil Co. laid 6.5 miles of 4-inch line from the Morrison pool, Clark County, to loading racks. Sinclair Prairie Pipe Line Co. completed 5 miles of 6-inch line from the Hauschild pool in Rice County to Saxman.

Skelly Oil Co. laid 20 miles of 6-inch line connecting the Lorraine pool, Ellsworth County, with its main line. White Eagle Pipe Line Co. laid 6.5 miles of 8-inch line in the Augusta area, Butler County. The same company completed 43 miles of 10-inch line from Hutchinson to the Valley Center pool in Sedgwick County. Skelly Oil Co. constructed 5 miles of 6-inch line connecting two parallel lines running northwest and southeast. Continental Oil Co. laid 2.37 miles of 8-inch line from the end of its system in the Geneseo field to new producing areas to the west.

ROCKY MOUNTAIN STATES

Oil pipe line construction in the northern Rocky Mountain area was limited to a few small projects. In Colorado, the William E. Hughes Estate placed in operation in April a 15½-mile 4-inch line from the Gramps pool, in Archuleta County, to the Denver & Rio Grande Western Railroad at Chama, N. Mex. The line is welded and equipped with oil heaters.

The Yale Petroleum Corp. completed in March an 8-mile 6-inch line from the Garland dome, Big Horn County, Wyoming, to the Burlington loading racks at Lovell. Oil is being run from its own wells and wells of affiliates and shipped to a refinery at Billings, Mont.

The Illinois Pipe Line Co. built an 8-mile 6-inch line from the Garland field to the Ohio Oil Co.'s new refinery at Lovell and placed it in operation late in October.

The Yale Petroleum Corp. began running oil on March 9 from the Hidden dome, in Washakie County, Wyoming, to its refinery at Worland. It is a welded 2-inch line 18.5 miles long.

The Home Oil & Refining Co. made some progress in plans for the construction of a 100-mile line from the Cut Bank and Kevin-Sunburst fields in Montana to its refinery at Great Falls. Work is expected to start early in 1938.

CALIFORNIA

Only short crude oil pipe lines were laid in California. It only required about 3 miles of new line to connect up the Santa Maria Valley field of Santa Barbara County to Union Oil Co.'s facilities and only a few miles of new pipe to take care of the El Segundo field of the Los Angeles Basin. General Petroleum Corp. connected the Wilmington field by laying a few thousand feet of new line and Standard Oil Co. laid 8 miles of 6- and 8-inch line from Wilmington to Hynes. The Petrol Corp. laid about 2 miles of new 8-inch line from the Wilmington field. Hancock Oil Co. laid a 10-inch pipe line from Wilmington to Long Beach, a distance of approximately 6 miles. The Pyramid field of Kern County required about 1 mile of new line. In the Rio Bravo area of Kern County Union Oil Co. laid 10 miles of 8-inch welded pipe from the Kernco lease to its Rio Bravo pump station. Standard Oil Co. laid 3 miles of 8-inch line to connect the Canal field.

CANADA

The most important oil pipe line activity in the Alberta fields in Canada in 1937 was the looping for several miles of the Royalite Oil Co. pipe line from the Turner Valley field to Calgary. This work, completed late in December, increased the crude capacity of the line from 10,000 to 13,000 bbls. while installa-

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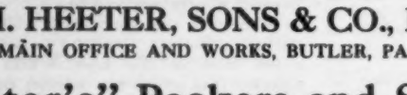

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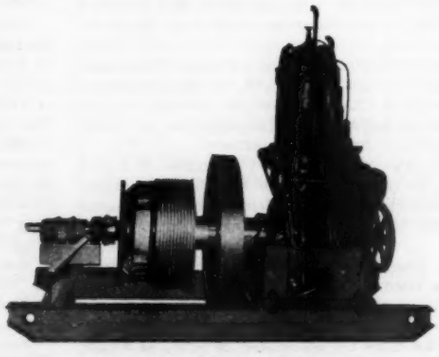

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tion of more powerful pumps was expected to further increase capacity to 16,000 bbls. A number of other pipe line projects designed to facilitate the marketing of Turner Valley crude were under discussion, but no actual work was started.

In the northwest territories, Imperial Oil, Ltd., laid 9 miles of line, supplemented by storage tanks and two pumps, on the Bear River Portage, to facilitate the delivery of petroleum products from its field and refining plant at Fort Norman on the Mackenzie River to the Great Beak Lake mining field.

Natural Gas Lines

Two important pipe line projects were finished in 1937, one in Kansas and the other in South Texas, but most of the work was on short lines to connect with trunk systems and natural gasoline plants.

KANSAS

Panhandle Eastern Pipe Line Co.'s program of looping its gas lines from the Texas Panhandle fields across Kansas and other states to Detroit, Mich., was one of the larger projects of the year. This included 40 miles of 24-inch line out of Liberal, Kans.; 34 miles of the same size line out of Greensburg, 42 miles out of Haven, 35 miles out of Olpe and 47 miles out of Louisburg.

Phillips Petroleum Co. laid a natural gasoline line from a booster station near Liberal to La Verne, Okla., connecting with the Borger-Bartlesville line. The Northern Natural Gas Co. of Omaha, Neb., looped 20 miles of its lines in northern Kansas early in the year.

OKLAHOMA

Oklahoma Natural Gas Co. laid 60 miles of 10- and 8-inch natural gas line to Enid from the Marshall, Crescent and Lovell fields in Logan County. West Oak Gasoline Co. constructed a 14-mile 10-inch gas line in the Beckham County fields, near Sayre. Cities Service Gas Co.'s 18-inch line from Tallant to Cotton Valley, northeastern Oklahoma, was reconditioned and 2 miles of new pipe laid, plus 3 miles of new 16-inch pipe. Construction of 22 miles of from 4- to 20-inch gas gathering lines in the Billings field, Noble County, was begun by Continental Oil Co. late in the year. Cities Service Gas Co. completed overhauling its gas lines and compressor stations in Oklahoma, Kansas and Texas late in the year, adding 47 miles of 12-inch line from Fitts to Seminole.

SOUTH TEXAS

Pipe line construction along the Gulf Coast during 1937 was featured by one major project, a 122-mile 10-inch welded gas line from the Tomball field in Harris County to industrial centers at Houston, Baytown and Port Arthur. The line was laid by the Latex Construction Co. for the Humble Oil & Refining Co.

Interstate Natural Gas Co. completed 25 miles of 20-inch welded gas line from the Monroe and Richland fields in northeast Louisiana to Baton Rouge. The line was looped from Ferriday to the Mississippi River, and from Winsboro to Mangham and south of Alto.

Houston Pipe Line Co. completed a 7-mile gas line from the Silsbee field, Hardin County, to town of Silsbee. Through this line gas from the field is delivered to Gulf Cities Natural Gas Co., a subsidiary, which distributes the gas to domestic consumers.

Rio Grande Valley Gas Co., serving 17 valley cities with gas, completed 9 miles of 6-inch from the La Blanca field to its main gas distribution system near Donna.

From the Mestanas field, Rio Grande Valley Gas Co. laid 4 miles of 4-inch gas line to its main system.

ROCKY MOUNTAIN STATES

The principal gas line construction in the northern Rocky Mountain area was the laying of a 21-mile 10-inch line by the Mountain Fuel Supply Co. from its wells in Clay Basin, Daggett County, Utah, to the South Baxter Basin field in Wyoming, where a connection was made with the company's trunk line to Salt Lake City and Ogden, Utah. Bechtel & Kaiser, Inc., San Francisco, had the main contract, and the H. C. Price Co., of Bartlesville, Okla., had the electric welding contract.

CALIFORNIA

Construction of natural gas pipe lines in California was a negligible factor, but Pacific Gas & Electric Corp. completed a new pipe line connecting the Rio Vista gas field of Solano County with its existing main trunk. This line, which cost $922,000, was 58 miles in length and of several sizes of pipe. Another 14½ miles of 10-inch line connected the Rio Vista main line with the 6-inch pipe line between Dixon and Davis. From Davis the company laid 12 miles of 8-inch pipe to a point about 2 miles north of Woodland in order to provide natural gas facilities to the Spreckels beet sugar refinery. This line supplies a part of the load to meet requirements in the San Francisco Bay region. In Los Angeles Basin Lomita Gasoline Co. started laying a 16-inch natural gas line from the Wilmington field to its natural gasoline plant on the Jergens property at Long Beach late in 1937. This 10-mile gas line is scheduled for completion early in 1938.

CANADA

In Alberta, Canada, during 1937 the most important natural gas pipe line construction was the laying by Northwestern Utilities, Ltd. of 5½ miles of 12¾-inch line from the Bonnie Doon suburb eastward. This was a further step in the ultimate complete duplication of the company's main transmission line from the Viking field to Edmonton, a portion on the Viking end having already been duplicated.

In Ontario the Oxford Pipe Line Co. laid 13⅓ miles of 6-inch line to deliver gas from the Brownsville field in Oxford County to the Southern Ontario Gas Co.'s main transmission line at Ingersoll; also constructing a purification plant at the field end with a capacity of 5,000,000 feet a day.

The Central Pipe Line Co. of Chatnam laid 4 miles of 4-inch line to connect its existing gas system, already serving Vienna and Aylmer, with Springfield, where a franchise had been secured. Later a line was laid to deliver gas from the Brownsville field to Springfield, and a purification plant of 4,000,000 feet maximum daily capacity built at Springfield.

In Saskatchewan the Lloydminster Gas Co. laid 1 mile of new line to deliver gas from a new producer west of the town to its main transmission line.

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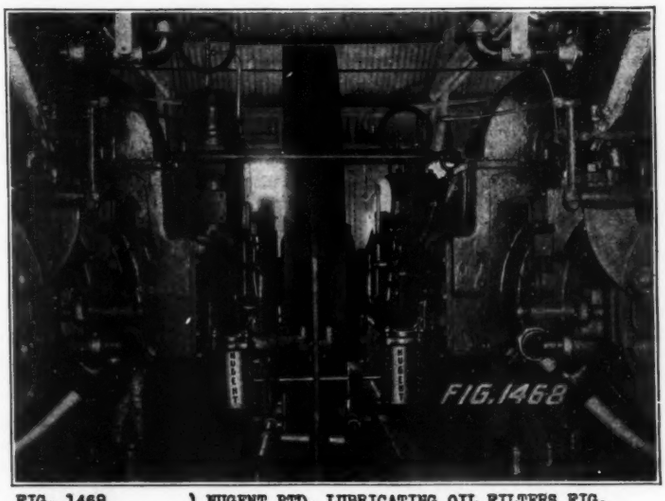

FIG. 1468) NUGENT PTD. LUBRICATING OIL FILTERS FIG.
WM.W.NUGENT & CO.) 1116NC #1R AND SIGHT FEED VALVES ON COOPER-
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Grim Reaper Took Many Useful Lives From All Branches of the Industry

The oil and gas industry in America and in foreign countries lost many men by death in the past year. The end came for men ranking from the greatest figure in the history of oil down to men in humble places in the industry. Following are the names of the dead that were recorded in The Oil and Gas Journal:

A

Abrams, Edward Everett, 82, Pennsylvania operator, September 22, Butler, Pa.

Andrews, R. B., 45, director general, Romano Americano, Rumania, February.

Atkins, Horace H., 64, pioneer Oklahoma oil man, December 10, Muskogee, Okla.

B

Bailey, Frederick, 62, driller, Ontario, Canada, February.

Baker, William, 90, pioneer oil man, Oil City, Pa., June.

Barber, Emery Gardiner, retired director, Standard Oil Co. of New Jersey, Ridgewood, N. J., March.

Bashara, Sam M., 29, August 6, Houston, Tex.

Baxter, Lionel D., assistant general manager, West India Oil Co., Buenos Aires, January.

Bearman, R. A., 59, operator, October 12, Cisco, Tex.

Beighley, Robert E., 68, pioneer oil man, Muskogee, Okla., January 13.

Bisett, Edward W., 40, Skelly Oil Co., October 9, Pampa, Tex.

Brewster, Earl W., Union Oil Co. of California, September 25, Phoenix, Ariz.

Brogdon, Alfred, 38, South Chester Tube Co., Fort Worth, Tex., May.

Brown, C. P., 51, president, Balcones Oil Co., Shreveport, La., February 16.

Buchanan, David K., 81, formerly with Gulf Refining Co., Houston, Tex., May.

Bullock, C. M., American Drilling Co., Muskegon, Mich., May.

Butler, E. M., 51, Butler Oil & Refining Co. and Oklahoma Oil Co., October 18, Denver, Colo.

C

Campbell, C. W. (Watt), 60, drilling contractor, Tulsa, September 2.

Carroll, Joe, 40, former superintendent, Great Lakes Pipe Line Co., Arizona, March.

Carson, Usher, 74, Veteran oil operator, Laredo, Tex., May.

Carter, John, scout, Tide Water Oil Co., San Antonio, Tex., June.

Carver, J. S., 65, retired, Ohio Oil Co., Bristow, Okla., January 21.

Cherry, Raymond H., 43, sales manager, Wickwire Spencer Wire Rope, Westfield, N. J., March 20.

Cheney, Charles A., 52, geologist, Mattoon, Ill., September 2.

Claggett, Edward Dayton, 74, oil operator, Laredo, Tex., November.

Clark, Earle A., 54, vice president, Columbia Gas & Electric Co., Pittsburgh, Pa., February 27.

Cloud, James G., 52, vice president, Great Plains Oil & Gas Co., Tulsa, January.

Cobb, T. B., 57, oil operator, Pampa, Tex., January.

Collins, Dr. William Henry, 58, consultant, Canadian Department of Mines and Resources, Ottawa, January 14.

Coe, Fred, 63, Texas Co., Ardmore, Okla., July 8.

Cochran, James E., Taxman Refining Co., Wichita Falls, Tex., September 29.

Conway, Terrence J., 53, oil man of San Antonio, Tex., July 7.

Corcoran, Daniel A., 45, Oklahoma City, October 14.

Crawford, E. T., 65, oil operator, April.

Cremin, T. O., 67, oil producer, Tulsa, September 2.

Crim, W. N., 72, Kilgore, Tex., July.

Crossley, L. J., 55, oil operator, Tulsa, March.

Crowder, William Henry, 63, oil operator, Tulsa, April 22.

Cullinan, J. S., 77, organizer, American Republics Corp., Palo Alto, Calif., March.

D

Davis, Jack, scouting department, Humble Oil & Refining Co., Tucson, Ariz., January.

Davis, J. Ross, 50, traffic manager, Humble Oil & Refining Co., Houston, Tex., April.

Dawson, O. T., vice president, National Supply Co., Tulsa, April 19.

Day, Donald McLain, Shell Oil Co., Oakland, Calif., September.

Degroff, Edgar N., Tulsa, September 22.

Dimm, Luther D., Standard Oil of California, July.

Donnelly, Francis Edward, 32, vice president, Eastman Oil Co., Fort Worth, Tex., April.

Dowler, Frank L., 78, driller, Tulsa, February 7.

Dunning, Douglas, 39, oil operator, Fort Worth, Tex., April.

Dunning, William Harris, Jr., 43, oil operator, Fort Worth, Tex., March 5.

E

Edgar, James Gordon, 65, secretary, McLeod Oil Co., Calgary, Alberta, May.

Ehrenfels, H., Charles, 65, retired, Standard Oil Co., New Orleans, La., February 19.

Ensle, William C., 74, pioneer oil man, Rouseville, Pa., July 7.

F

Faltinson, Albert, 72, oil producer, Tulsa, February 17.

Farish, Jeff D., 49, oil attorney, Houston, Tex., July.

Farquhar, J. G., 55, oil executive, Pittsburgh, Pa., March 11.

Fernald, Dr. Robert Heywood, dean, Towne Scientific School, University of Pennsylvania, Philadelphia, Pa., April 24.

Ferry, J. H., Illinois Pipe Line Co., Lima, Ohio, July.

G

Garrett, Stewart Grayson, 44, Superior Oil Co., La Jolla, Calif., July 8.

George, Charles A., 69, oil operator, Oilton, Okla., March 4.

George, Prof. H. C., 56, Pittsburgh University, Pittsburgh, Pa., September.

Gilmore, J. F., vice president, Enterprise Engine Co., Los Angeles, Calif., February.

Gooch, Hampton, oil operator, Independence, Mo., September.

Gothe, Victor E., 64, independent operator, New York City, August 4.

Gotshall, Robert W., 55, general sales representative, Caterpillar Tractor Co., Peoria, Ill., February.

Gray, Walter B., 56, manager, Jarecki Manufacturing Co., Tulsa, March 28.

Greene, John A., 57, president, Green Oil & Gas Co., Mannford, Okla., February.

Griffith, Dr. P. S., oil operator, Houston, Tex., June 18.

Guidry, Simon Armand (Pop), 69, Louisiana oil prospector, New Orleans, November 11.

H

Hall, Frank B., 32, oil refiner, Corpus Christi, Tex., June 8.

Hanrahan, John J., superintendent, Southern Division, Texas Pipe Line Co. of Oklahoma, Okmulgee, Okla., March 28.

Heald, Rupert Jerome, 80, contractor, Chambersburgh, Pa., October 16.

Hegwer, Paul, deputy supervisor of U.S.G.S., Casper, Wyo., October 24.

Herndon, O. K., 53, independent oil operator, Murfreesboro, Ark., July 26.

Higgins, Charles M., 80, retired vice president, Standard Oil Co. of New York, New York, March 20.

Hill, William Hogarth, 69, vice president, American Radiator Co., February.

Hilliard, William Finley, 83, retired oil man, Tulsa, February 15.

Hocker, Ernest W., 52, Sinclair Prairie Oil Co., Tulsa, December 12.

Horn, Everett E., 43, Tide Water Oil Co., Tulsa, July 26.

Howard, William M., 56, manager, New York district, American Glycerine Co., Bradford, Pa., February 25.

Hughes, Gen. Garnet, 56, Brown Oil Corp., Calgary, Alberta, May.

Hyatt, Clarke C., partner, Hyatt & Norton, Detroit, Mich., April.

J

Jarvis, Perley C., 71, drilling contractor, Tulsa, July.

Johnson, W. High, 46, assistant treasurer, Magnolia Petroleum Co., Dallas, Tex., June.

Jones, T. M., 60, oil man, Huntsville, Tex., October.

Juthmann, August F., paymaster, Chicago offices, Standard Oil Co. (Indiana), Chicago, January 5.

K

Kelch, E. F., 58, drilling contractor, Tulsa, January.

Kelly, Thomas J., 80, former secretary-treasurer, Paragon Oil Co., Toledo, Ohio, April.

Kerr, Chester L., treasurer, United Gas Co., Los Angeles, Calif., January.

King, Russell C., 52, chief clerk, traffic department, Standard Oil Co. (Indiana), Chicago, January.

King, Sidney E., 82, drilling contractor, Dallas, Tex., January 11.

Kingsbury, Kenneth R., president of Standard Oil of California, November 22 on the Grace liner Santa Paula which was passing through the Panama Canal.

Kleber, Dr. Clemens Oscar, 74, chemist, Clifton, N. J., July.

Korp, John, 64, independent oil operator, Abilene, Tex., July.

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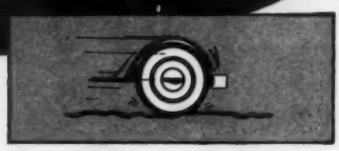

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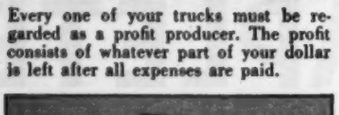

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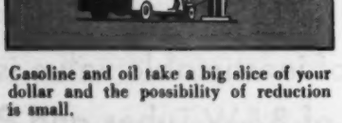

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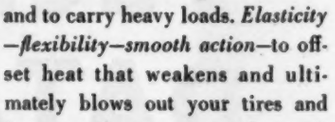

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L

Lenertz, John A., 48, manager, state tax department, Empire Companies, Kansas City, Mo., January 25.

Lester, Lawrence P., 69, Reed Roller Bit Co., Oklahoma City, October 12.

Lewis, H. A., Standard Oil of Indiana, Chicago, July 25.

Littlefield, Clarence E., oil man, Riverton, Wyo., February.

Locke, Lucien P., 37, Outdoor Advertising, Inc., Ponte Vedra Beach, Jacksonville, Florida, December 2.

Love, W. H., 63, legal department, Sinclair Prairie Oil Co., Tulsa, June 24.

Lykes, Norwood, 49, oil operator, Shreveport, La., April.

Mc

McBride, Paul Jefferson, 69, pioneer oil man, Tulsa, January 11.

McClain, Harry T., 51, former oil operator, Lake Charles, La., February.

McDermott, Francis R., 52, Bolivar, N. Y., September 19.

McDonald, Donald, American Meter Co., New York City, October 8.

McKay, Alexander G., 98, driller, Ingersoll, Ontario, March.

McKelvy, Robert, Tide Water Associated Oil Co., New York City, December 9.

McKewon, John W., O. C. S. Manufacturing Co., Tulsa, August 6.

McKinney, John L., pioneer producer, Titusville, Pa., May.

McLean, Charles M., 60 president, Canfield Oil Co., Cleveland, Ohio, June.

McMurray, J. F., 53, Ohio Oil Co., Montana, September.

M

Mancill, Edward, 34, Humble Oil & Refining Co., Victoria, Tex., September 27.

Mills, Ben R., 53, geologist, Mid-Continent Petroleum Corp., Tulsa, April 23.

Mobley, H. G., 47, superintendent, Humble Pipe Line Co., Houston, Tex., January 3.

Moon, Ralph M., 43, president, Moon Marketing Co., Tulsa, April 21.

Moore, J. Will, pioneer oil man, Okmulgee, Okla., February 4.

Moran, John J., 65, oil operator, Wichita Falls, Tex., February 5.

Morris, John G., president, Allied Drilling Co., Laredo, Tex., June.

Muhlherr, Herman, 60, Warren Petroleum Co., Guthrie, Okla., July 3.

Murrell, John L., 32, Dunigan Tool & Supply Co., Graham, Tex., October 17.

O

Oakes, Chandler A., 40, general superintendent, Godfrey L. Cabot, Inc., Charleston, W. Va., April.

Officer, Herbert G., 48, supervisor of land department, Amerada Petroleum Corp., Tulsa, May.

Osborn, J. B., 64, independent oil operator, Titusville, Pa., August.

P

Parks, Albert W., 82, president, Oil Springs Oil & Gas Co., Oil Springs, Ontario, March.

Patitz, J. F. Max, chief consulting engineer, Allis-Chalmers Manufacturing Co., Milwaukee, Wis., January 3.

Partridge, George C., 76, producer, Tulsa, April 10.

Preston, E. W., Humble Pipe Line Co., Sonora, Tex., April.

Proctor, William C., 70, retired, vice president and treasurer, Magnolia Petroleum Co., Dallas, Tex., February 18.

Pugh, Joe S., 62, oil operator, Hamilton, Tex., March 5.

R

Ralph, C. A., oil operator, Detroit, Mich., May.

Rathbone, Charles Horace, oil prospector, New York City, October 7.

Redmond, W. J., 56, oil man, Brownwood, Tex., February 16.

Requa, Mark L., 70, chief, National Petroleum War Service Board during World War, Los Angeles, Calif., March 6.

Rice, Guy C., 62, oil producer, Olean, N. Y., December 12.

Ritts, John V., 84, director, Devonian Oil Co., Butler, Pa., June 23.

Robinson, Frank, 69, tank gauging engineer, Ohio Oil Co., Findlay, Ohio, April.

Robinson, James B., 57, tank gauging engineer, Tulsa, February 22.

Rockefeller, John D., Sr., 98, retired, Standard Oil Co., Florida, May 23.

Root, Charles M., 75, oil operator, Evansville, Ind., October.

S

Sands, Robert M., 60, director, Tide Water Associated Oil Co., May.

Savage, B. W., 50, oil operator, Mineral Wells, Tex., September.

Schwartz, Charles, 68, retired driller, Tulsa, February 12.

Sheffield, Miller, Cushing, Okla., September 18.

Sheldon, Harry E., 75, president, Allegheny Steel Corp., February 10.

Simpson, Stuart H., 91, pioneer oil producer, Oil City, Pa., December 26.

Smart, Henry C., 70, retired executive, Standard Oil Co. of New Jersey, New Rochelle, N. Y., January 24.

Smith, Stephen B., 57, vice president, Pioneer Drilling Co., Tulsa, April 23.

Stanford, J. W., Sinclair Prairie Oil Co., Houston, August 9.

Stevens, Edward L., 43, Union Wire Rope Corp., Tulsa, September 21.

Steward, George R., 62, contractor, Lexington, Ky., August 6.

Stewart, David C., former vice president, Magnolia Petroleum Co., Dallas, Tex., January 23.

Stewart, Sidney V., 54, vice president and general manager, Ajax Iron Works, Corry, Pa., January 14.

Stieglitz, Dr. Julius, consultant, Universal Oil Products Co., Chicago, January.

Swain, Chester Odiorne, 60, vice president, Standard Oil Co. of New Jersey, New York, April 21.

Sweatt, W. R., Minneapolis-Honeyweld Regulator Co., October 12.

Swope, E. E., Magnolia Petroleum Co., Lake Arthur, La., December 12.

T

Taylor, Robert Fred., 54, Imperial Oil Refineries, Ltd., Sarnia, Ontario, February 27.

Templeton, John E., 83, pioneer oil operator, Tiona, Pa., April.

Terry, S. N., Sr., oil field machinist, Shamrock, Okla., February.

Thompson, Thomas J., 73, retired, director, Standard Oil Co. (Indiana), Chicago, February 15.

Thurman, Floyd E., 59, oil man, Nowata, Okla., September 26.

Tilley, George W., 73, deputy supervisor, oil and gas division, Railroad Commission of Texas, Olney, Tex., February 27.

U

Urschel, J. E., 54, oil operator, Dallas, Tex., March.

V

Vensel, Deverne, 62, oil operator, Tulsa, December 26.

Vickers, Thomas H., Oklahoma and Texas oil man, Wichita Falls, Tex., October 22.

W

Wall, Rush J., oil man, Chatham, Ontario, March.

Wallace, F. H., 57, drilling contractor, Tulsa, January 8.

Warren, J. Kirby, 36, Ohio Oil Co., Tulsa, July 26.

Weaver, George W., 62, driller, Cisco, Tex., October 19.

Webster, Clay Johnson, 59, National Oil Co. and C. J. Webster Oil & Gas Co. of San Antonio, San Antonio, Tex., January.

Weller, Fred R., Standard of New Jersey, Daytona Beach, Fla., December 2.

Whiting, Oliver, 71, South Chester Tube Co., Marietta, Ohio, August 6.

Wick, Harry M., 55, oil producer, Bradford, Pa., September 25.

Winans, James E., 66, president, Winans Oil Co., Fort Worth, Tex., February.

Woidich, Dr. Francis Sales, engineer, Metz, France, January 3.

Wokle, John C., L. Sonneborn Sons, Inc., Upper Montclair, N. J.

Woods, Ralph A., 69, retired oil man, Tulsa, March 22.

Y

Yerks, Harry, 65, oil operator, Petrolia, Ontario, May.

State Inspection Bureau of Wisconsin advises that the fee for inspecting gasoline and kerosene in Wisconsin is 2 cents per barrel of 50 gallons rather than 4 cents per barrel as shown in the Digest of State Inspection Laws Relating to Petroleum Products.

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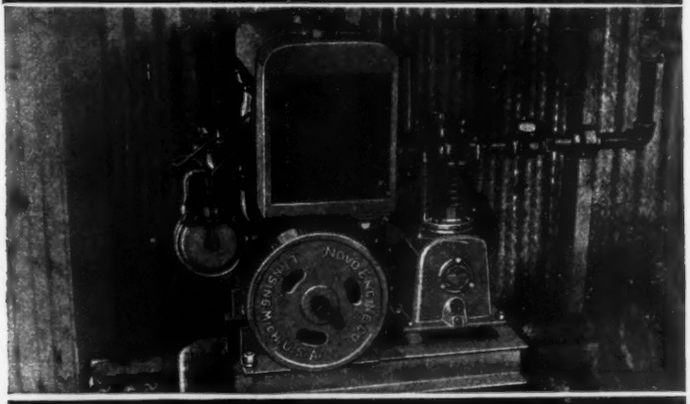

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(Continued from Page 65)

foreign crude oil imported during 11 months of 1937, the United States shipped 3.109 bbls. of unrefined oil to foreign consumers. In contrast, this country exported only 2.238 bbls. of crude to each barrel imported in 11 months of 1936.

Expansion of foreign refining facilities, defense preparations and the sharp decline in Roumanian and U.S.S.R. exports were among the factors responsible for the increase in this country's crude oil exports. The same factors played a part in reducing the imports by this country as American companies operating abroad developed more market outlets in foreign lands.

Favor of domestic lubricating oils in the world markets continued to gain expression through increased exports in 1937. Shipment of 10,078,000 bbls. of lubricating oils during the 11 months was an increase of 2,395,000 bbls. over 1936, or by 31.2 per cent. In 1936, the exports of lubricating oils were only slightly above 1935 and the gain in business abroad for this particular product in 1937 was most impressive.

Due to the fact that total liquid petroleum exports for 1937—that is crude and refined products—will total approximately 175,000,000 bbls., the highest in history by several million barrels. this phase is accorded increasing attention. But for the substantial margin by which the record breaking export demand for petroleum exceeded imports in 1937, observers realize that much more rigid production curtailment in this country would have been required to reach even the existing stability.

For the reason that petroleum exports increased at a much more rapid rate in 1937 than predictable, one of the big questions facing the domestic industry for 1938 and future years is whether the foreign demand will continue at or above 1937 levels.

Vast quantities of crude and petroleum products have been placed in storage provided by European powers as a preparedness step against war. Throughout 1937 considerable petroleum went to foreign countries to fill war department tanks constructed in the past two or three years and therefore, are not subject to replacement, except at peace-time rates, unless emergency demand develops. Uncertainties of the petroleum export situation revolve around how nearly filled were the military storage tanks of the big purchasers in 1937 and how great has been the volume of oil applied to this particular phase.

Utmost secrecy guards the petroleum storage programs of the large foreign powers making it impossible for statisticians to determine just what part of the 1937 petroleum export requirements fall in the nonrecurring classification. There is nothing to indicate foreign oil buying in this country will taper off during the first half of 1938 and there are some observers who feel too much importance has been assigned to the intangible factor of war supplies and that the normal consumption abroad will continue to increase. Even those assigning much importance to the foreign oil purchases for defensive purposes feel that declining production in Rumania and Poland will require sufficient replacement of those supplies to leave the United States export picture undisturbed.

The factors of military petroleum stocks and diminishing supplies from European countries are also important in consideration of future import trends, and particularly in view of the duty imposed on foreign petroleum by this country. Requirements for the types of crude and refined products reaching this country, and other factors influencing petroleum imports, such as ownership of foreign reserves, probably will not change materially for at least a year or longer. Whether reciprocal trade considerations will become a factor in petroleum imports remains uncertain although there are elements in the industry feeling that some of our fuel oil requirements could be served from foreign reserves without imposing a hardship on domestic producers and refiners.

Most of the petroleum imports are received at Atlantic Coast ports. Out of the total imports of 56,977,000 bbls. reported by the A.P.I. for 1937, only 4,490,000 bbls. were discharged at Gulf Coast ports and the remainder came to the Atlantic Seaboard.

In Table 1, crude oil imports for the 11 months of 1937 were at the rate of 72,131 bbls. daily, but this country was at the same time shipping abroad a daily average of 186,136 bbls., leaving a margin of 114,005 bbls. per day in favor of exports. The margin of exports in excess of imports was even more substantial in refined products. While this country was receiving an average of 82,194 bbls. of refined products per day in the 11 months of 1937, United States refiners were selling 293,695 bbls. per day to foreign customers, a difference of 211,501 bbls. in favor of exports.

Intercoastal movement of petroleum from the Pacific to the Atlantic declined again in 1937 for the third consecutive year. Reports reaching the A.P.I. show total movement of California oil to Atlantic ports for 1937 at 5,778,000 bbls., a decline of 1,953,000 bbls. from 1936 or about 25.3 per cent. Gasoline continues to dominate the intercoastal petroleum traffic but dropped to 3,904,000 bbls. in 1937, compared to 5,823,000 bbls. in 1936. Two shipments of California crude oil were discharged at Atlantic Coast ports last year, the first traffic of this material reported from the Pacific Coast for several years, although it is quite likely small amounts have been included under the item "other petroleum oils" in preceding years.

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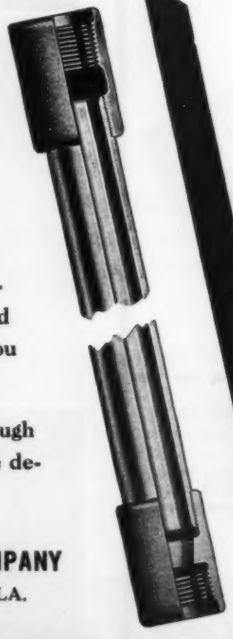

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ENGINEERING and OPERATING

In This Issue

COOK FIELD EXEMPLIFIES VALUE OF GAS REPRESSURING PROGRAM
By Mitchell Tucker ..... *Page 176*

The Cook field of West Central Texas offers an outstanding example of the increase in ultimate production that can be obtained through a well-planned program of pressure maintenance. By repressuring with gas it is estimated that an ultimate recovery of approximately 20,000,000 barrels will be obtained whereas only some 7,500,000 barrels would have been recovered under normal decline. To date over 13,500,000 barrels of crude have been withdrawn, accompanied by over 15,000,000,000 feet of gas of which some 60 per cent or almost 9,000,000,000 feet have been returned to the producing formation.

SIMPLIFIED ABSORPTION CONTROL REDUCES NATURAL GASOLINE LOSS
By G. M. Liljenstein ..... *Page 180*

Imperfect absorption and stripping in natural gasoline plants often allows the gas leaving the absorber to contain excessive quantities of salable gasoline. The extent of these losses can be regulated by adequate stripping and absorption controls. Here is discussed a method of controlling the isopentane plus content of the residue gas as a means of checking the loss of extractable gasoline fractions.

DETERMINING THE DENSITIES OF OILS AT ELEVATED TEMPERATURES
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Many charts of density as a function of temperature are in use but most do not extend to high temperatures. The author has developed a convenient and complete chart of approximate densities that will be of use to many plant engineers in determining the densities of various liquid hydrocarbons at comparatively high temperatures.

PERTINENT FACTORS OF PIPE LINE DESIGN AND CONSTRUCTION COSTS
By Frank R. Young ..... *Page 186*

In undertaking the construction of a gas pipe line the engineer must first settle many problems, since the design and cost of the line will have an important bearing on the operating cost of the system. Here the author discusses the economics of pipe line design, gives representative solutions of problems encountered in looping and pipe line capacities and presents estimated costs for a typical line.

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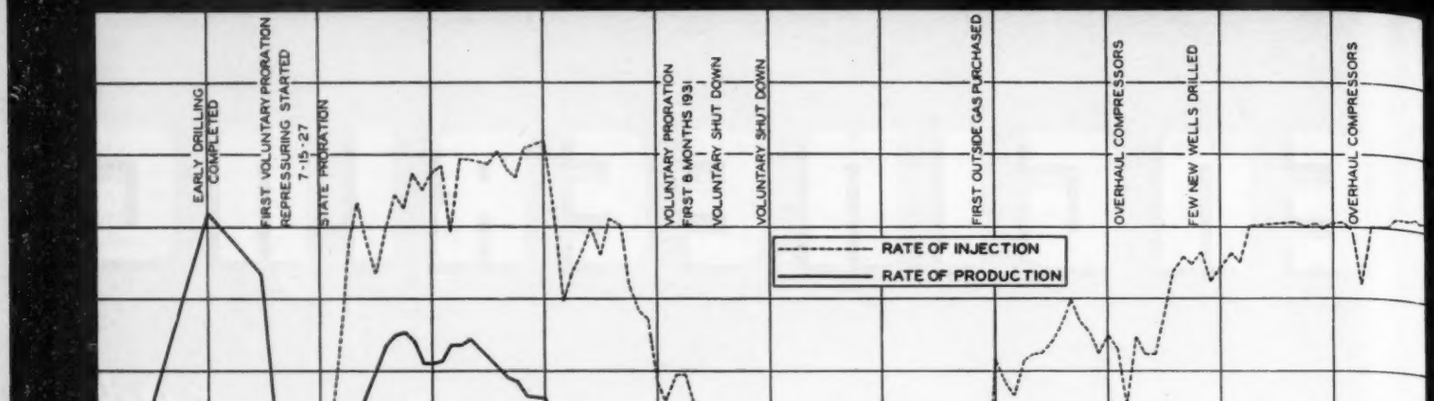


Fig. 1—Rate-time curve tracing the field's producing life, and showing the effect of gas injection on the producing rate

Cook Field Exemplifies Value of Pressure Maintenance

By MITCHELL TUCKER

The W. I. Cook pool in Shackelford County, West Central Texas, having been operated as a unit under a pressure maintenance program for the past 10 years provides one of the industry's best examples of the economies and increased recoveries incident to this method of oil production.

Combining to make this pool particularly adaptable to pressure maintenance are the facts that reservoir conditions are especially favorable and the majority of the lease and royalty holdings are in the hands of three owners. The major portion of the pool is located on the W. I. Cook ranch, and all of the producing oil leases are owned by Roeser & Pendleton, Inc., and Continental Oil Co., and operated by Roeser & Pendleton, Inc. Practically the entire royalty is owned by the W. I. Cook Estate, which has given the operators its entire cooperation in all phases of unit repressuring. Two small leases on the flank of this repressured area were originally held by other companies, but were included in the unit program and have since been added to the major holdings by purchase.

Production From Shallow Sand

The Cook pool was discovered in February, 1926, by Roeser & Pendleton, Inc., in a shallow sand of the Cisco series at about 1,300 feet. The discovery well had an initial production of 1,000 bbls. and a rock pressure estimated at 450 pounds. A rapid drilling campaign followed and by May, 1927, a total of 142 producers had been completed, having an aggregate daily potential of 8,700 bbls. of oil and 7,000,000 feet of gas. At this time is was thought advisable to institute a period of voluntary proration and a curtailment of drilling operations due to a rapid nation-wide increase of production over consumption of oil. Much of the gas produced from the early wells was wasted and a decline in the rate of production set in shortly after their completion. A systematic program of returning gas to the producing formation was begun July 15, 1927, but injection volumes were voluntarily restricted for several months.

Interior of Roeser & Pendleton's compressor plant at the Cook field gasoline plant, where three 190-horsepower compressors were added for pressure maintenance purposes

Effect of Gas Injection

Three 190-hp. direct-connected compressors were added to the gasoline plant for boosting injection gas to the required pressure. Residue gas and vapors from the fractionating column were taken from the low-pressure gasoline plant for injection purposes until reservoir gas production dropped to the point where it was no longer sufficient in volume to act as an effective motivating force in the oil reservoir. Since that time, gas has been purchased from outside sources in sufficient quantity to bring the total input volume up to the compressor capacity.

At the present time there are 286 producing wells in the Cook pool under the influence of artificial pressure maintenance, brought about by gas recycling through 33 input wells. Of this total, 90 wells have been temporarily shut-in for purposes of conservation. Experience has taught that true conservation is more nearly approached by producing the oil in a reservoir through its most efficient outlets.

The project may be more properly considered one of pressure maintenance rather than one of pressure restoration since operations were begun early enough in the life of the field to prevent the decline of rock pressure below a point at which it would seem practical and desirable to maintain it.

Fig. 1 is a rate-time curve which traces the entire span of the field's production, and sets out the varying volumes of injection gas returned to the reservoir. The periods of voluntary proration do not permit a true reflection of the actual production decline during those times. However, the rate-time curve does reflect clearly the influence of repressuring and the effect of increasing or decreasing volumes of injection gas.

The field's decline may be considered in three stages. Its first decline

was from a flush point after the original drilling campaign was completed, and continued until July 15, 1927, when repressuring was begun. Voluntary proration during this interval further augmented the rate of production decline. Up to this point approximately 3,500,000 bbls. of oil were produced.

Second Decline Stage

Normal operations were resumed on January 1, 1928, but were carried forward under a program of state proration, which, however, was less stringent than the one voluntarily assumed. New drilling was begun which together with the considerable increase in the input gas volumes brought the average daily production up from a former low of 2,200 bbls. to 7,000 bbls. From this point the second declining stage began, and reached its low during the voluntary proration period occasioned by the depression in 1930 and 1931. As shown in Figure 1, the latter part of this declining period was due largely to a growing scarcity of gas for injection purposes. This was particularly true during the year 1933, when the available gas from the property itself dropped to about 2,000,000 feet per month, and the production to about 625 bbls. per day.

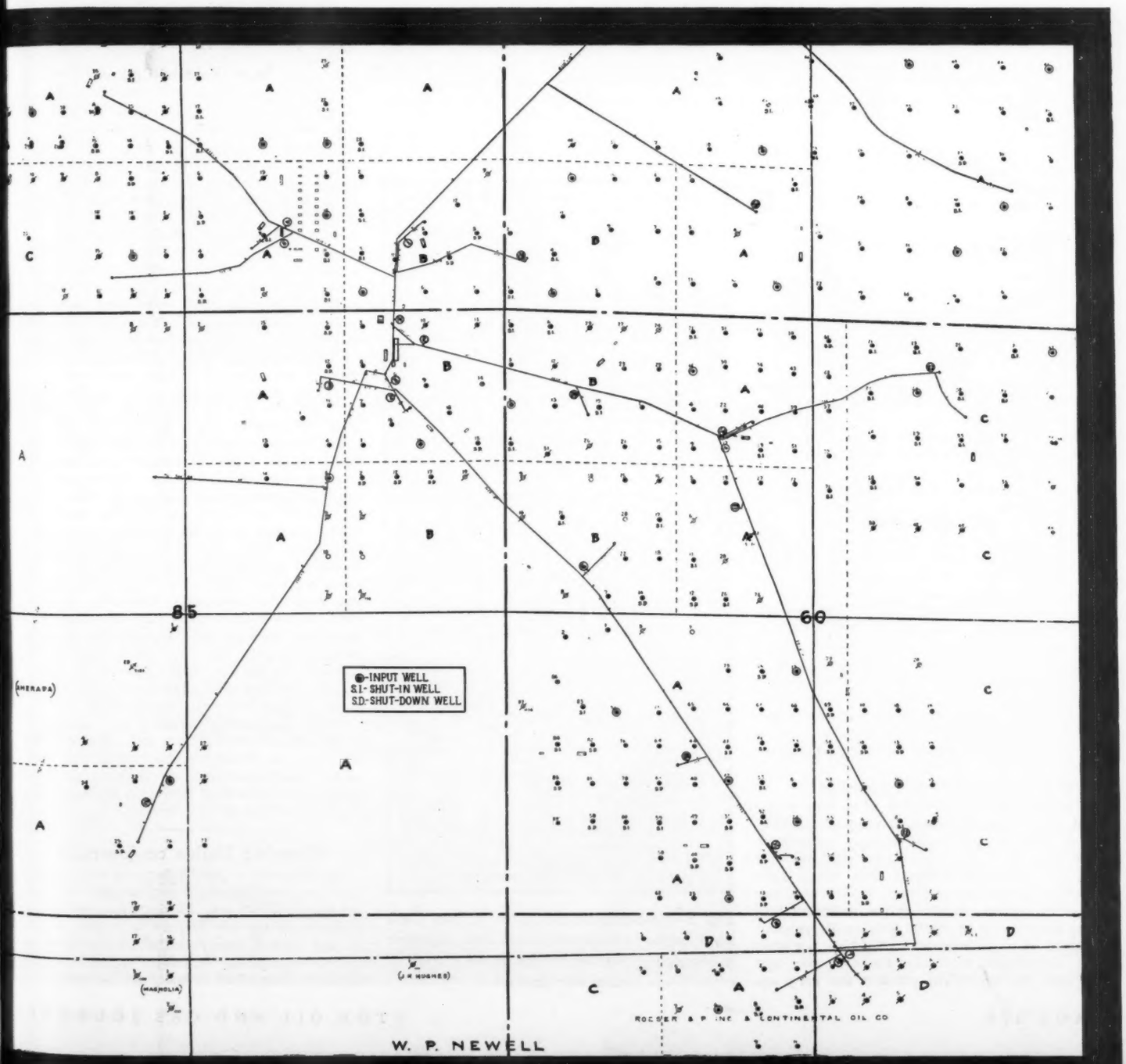
This decline was checked in November of 1933 by an arrangement to purchase outside gas from the Lone Star Gas Co., and later from other gas wells nearby, for injection purposes. During the next six months the volume of gas returned to the formation increased to about 70,000,000 feet per month, and the production rate responded readily by increasing to slightly over 2,000 bbls. per day. Again near the end of 1935, injection volumes were increased to about 100,000,000 feet per month, and the production rate correspondingly increased to about 2,200 bbls. per day. At about this time the drilling of a few wells on the northeast edge of the repressured area brought the daily rate up to 2,600 bbls. in September of 1935, as is shown in Figure 1.

From this point the third stage of decline began, but it has been very slight over the past two years due in a large part to the fact that injection volumes were not only maintained but slightly increased. A check of the ratios of gas injected to oil produced indicates that a slowly increasing amount of gas must be returned to the reservoir to maintain the production rate. This would be the normal expectancy, however, as increased by-passing or channeling of the gas may be expected during the later life of any field as the percentage of remaining oil is daily decreased. During the past eight months no decline in production rate has been recorded, and it has remained at or near 2,100 bbls. per day.

Recoveries

As of December 1, 1937, a total of 14,929,200,000 feet of gas has been withdrawn from the reservoir, together with 13,629,000 bbls. of oil. A total of 8,874,510,000 feet of gas has been returned to the sand, or about 60 per cent of the gas withdrawals. Total outside gas purchases for injection purposes amounts to 1,467,955,000 feet. A 60 per cent return of gas with-

Map of repressured area in the Cook field showing location of injection wells



drawals is considerably higher than most repressuring projects, but the correspondingly high recovery per acre-foot and percentage recovery, together with the fact that it is known that large volumes of gas have channeled and been recycled, the percentage return of gas does not appear excessive.

Figure 2 is a rate-cumulative curve on the repressured area of the Cook field, plotted by years on semi-logarithmic paper in order to show declines symmetrically for this reservoir under capillary or gas drive control. Here, as in the rate-time curve shown in Figure 1, the three stages of decline are reflected. Extrapolations from the three separate trends of decline to an economic limit of 200 bbls. per day (1 bbl. per well per day) assists in making estimates of recovery for each. Also, from these estimates, percentages of recovery, and probable ultimate yields per acre and per acre-foot calculations are possible.

Briefly, it is estimated that about 7,500,000 bbls. of oil would have been recovered from the area under normal conditions. The first application of proration during this initial stage of decline, however, does not permit as accurate control for extrapolating as would have been desired.

The second trend of decline indicates that an additional 4,000,000 bbls. of oil were recovered by repressuring with reservoir gas only, bringing estimated ultimate to 11,500,000 bbls.

From the present production rate, brought about by the injection of gas purchased from outside sources along with reservoir gas, an ultimate yield of 20,000,000 bbls. is indicated on the rate-cumulative curve. In other words, an increased 4,000,000 bbls. recovery may be ascribed to pressure maintenance with reservoir gas, and an additional 8,500,000 bbls. for continued pressure maintenance with extraneous gas, or an overall increase of 12,500,000 bbls. due to repressuring of the Cook reservoir.

The estimate of 20,000,000 bbls. ultimate recovery for the repressured portion of the pool may be checked by calculating percentage recoveries and recovery per acre-foot. The reservoir responds so readily to gas injection that it appears as if the only limiting factor in total recovery will be the remaining recoverable oil in place.

Productive Area

The productive area under pressure maintenance totals 1,200 acres, with a sand thickness varying from 5 to 30 feet. The average sand thickness of 30 representative wells, i.e., one in each 40-acre tract, indicates an overall average of 20 feet of pay section for the Cook reservoir. Hence, there are 24,000 acre-feet of producing formation in the repressured area. Early tests of formation pore space showed 30 per cent porosity. Although this appears rather high, it is confirmed by the highly permeable character of the section, and the high initial flowing gauges under such low rock pressures. In the following calculations a saturation factor of 70 per cent was used, which is later verified by volumetric deductions.

Had only the 7,500,000 bbls. of oil been recovered under normal decline, a yield of 313 bbls. per acre-foot, or 20 per cent recovery, would have been received. Under repressuring with reservoir gas, the estimated 11,500,000 bbls. would have meant a 30 per cent recovery, or 480 bbls. per acre-foot. Again considering the estimated ultimate recovery of 20,000,000 bbls., a 51 per cent recovery of oil is indicated or 833 bbls. per acre-foot. Percentage recoveries above 40 per cent are rare, but due to the efficient and early application of pressure maintenance, such a recovery as 51 per cent seems altogether probable.

A straight volumetric calculation may be made to check the 20,000,000-bbl. ultimate and confirm the 70 per cent saturation factor. One acre-foot contains 7,778 bbls. of formation space. Applying the 30 per cent porosity factor, there remains 2,333.4 bbls. of void space. After the further application of the 70 per cent saturation and the 51 per cent recovery factor, an ultimate yield of 833 bbls. per acre-foot is shown, which checks the figure suggested by the rate-cumulative curve.

Roeser and Pendleton, Inc., gasoline plant used in conjunction with the pressure maintenance program. The plant's capacity at present is about 4,000,000 cubic feet of gas daily

Several operating factors contribute to make the Cook an ideal field for pressure maintenance. In the first place, the reservoir was from the beginning completely under a gas drive control, there being no water drive apparent. In the second place, early experiments showed the sand to be highly permeable and indicated that it would be practically and economically feasible to maintain reservoir pressures of around 50 or 60 pounds.

All wells were cased on top of the sand upon completion. Early injection wells were tubed, but it was later found that this was not necessary except where packers are required to seal openings in the casing above the sand face. The trial and error method was used in selecting key or input wells. Property lines did not interfere with their location, so first experiments were in wells situated high on structure. This resulted in immediate channeling down dip through more porous streaks without having the effect of a driving force upon the remaining oil in place. Thereafter, input wells have been distributed throughout the entire structure. Usually the former small producing wells have been first tried as injection wells if they were favorably situated. Their low production rate indicated a restricted porous condition, and experience shows that it has been more effective to start the propulsive medium through the tighter portions of the reservoir.

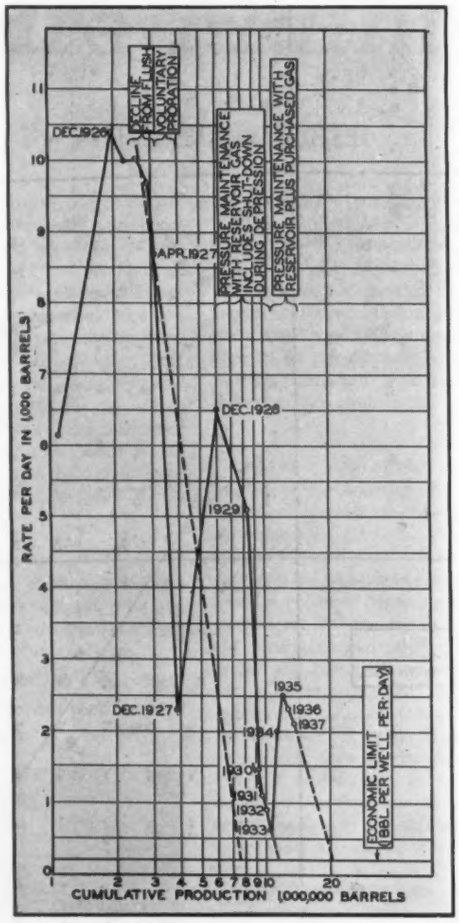


Fig. 2—Rate-cumulative curve on the Cook field under pressure maintenance, showing probable recoveries for the three stages of reservoir decline

Input Volume Control

After normal operation had been established in 1928, it was found that rock pressures varied from 50 to 100 pounds, hence there could be no uniformity of injection pressures. The problem then was one of input volume control in an effort to maintain rock pressures. By January of 1931, these pressures averaged from 20 to 60 pounds and at present are still within that range. A 10- to 25-pound differential of input over rock pressure will admit sufficient volumes to effect a satisfactory control. Monthly checks of rock pressures and required input pressures are made as a guide for day-to-day operations, as well as a check on changing subsurface conditions. These pressures do not remain constant due to occasional clogging of input wells, or the establishment of new channels to high ratio wells.

During a representative day in December, 1937, 3,200,000 feet of residue gas was supplied from the gasoline plant, 178,800 feet from the fractionating column, and 800,000 feet of purchased gas, or a total of 4,328,867 feet, was available for repressuring and fuel requirements. Deducting the 900,000 feet required for fuel, a total of 3,428,867 feet of gas was returned to the formation on that date. Gas deliveries to the gasoline plant from the field gathering system amounted to approximately 5,000,000 feet, indicating a production of 1,571,153 feet of new green gas from the reservoir. Generally speaking, yields at the gasoline plant vary downward with increasing rates of input or recycling gas. The crude oil gravity increased from 38½ degrees, corrected, in January, 1928, to about 40 degrees in 1930, and has been maintained at an average of 39, subject to seasonal fluctuations.

This project was installed by Graham P. Crutchfield, of Albany, Tex., then chief engineer for Roeser & Pendleton, Inc. He is now their general superintendent in the West Central Texas district. The details of operation are under the direction of Paul W. Armstrong.

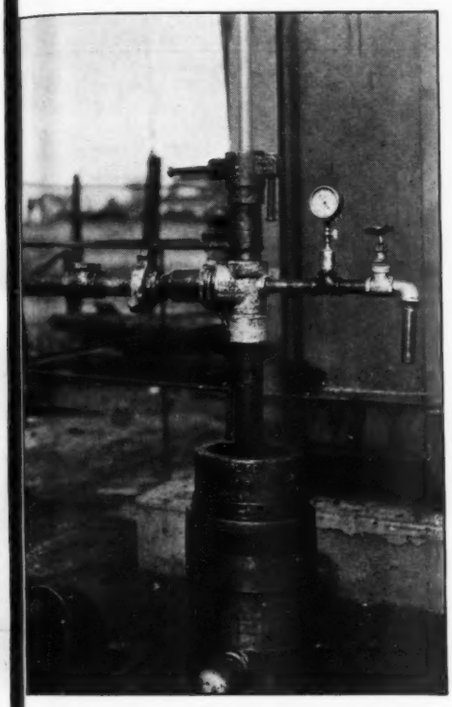
Warning Lights on Derricks

Oil operators in the El Segundo field of California have voluntarily begun placing red warning beacon lights atop oil derricks. Because of proximity to the Los Angeles Municipal Airport, the city council requested that oil operators cooperate to eliminate hazards to aircraft. The oil companies responded virtually 100 per cent.

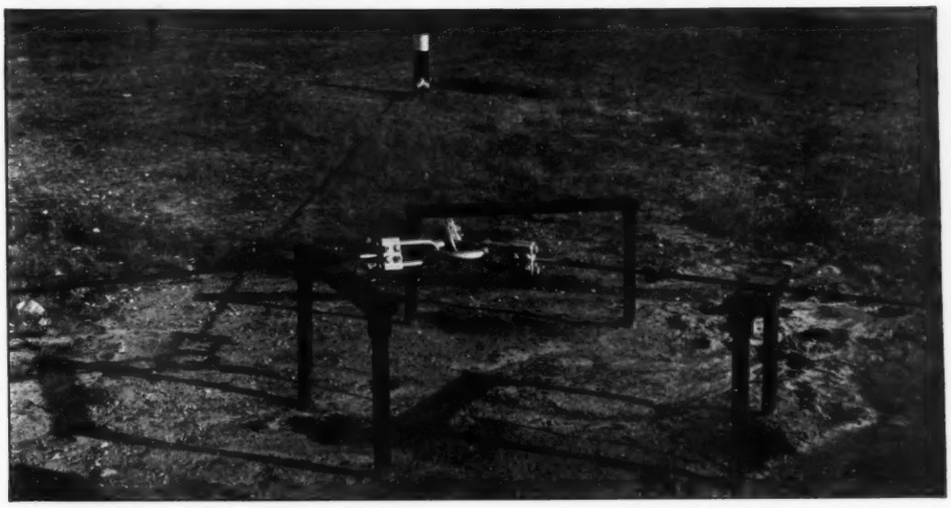
OPERATING IDEAS

Gauge on Pumping Well

One operator in the Oklahoma City field has installed a pressure gauge on the bleeder



line of pumping wells, the gauge being used to indicate the pressure of each pump stroke. Due to extremely heavy paraffin deposition the line from the tubing to the stock tanks becomes coated with paraffin so badly that a back pressure of as much as 50 pounds is placed on the tubing. When the line is clear the gauge will register from 20 to 25 pounds per stroke. The installation of the gauge also serves to show whether or not the working barrel at the bottom of the hole is functioning properly. Thus, without opening the bleeder line the pumper is enabled to ascertain whether the pump is operating correctly.

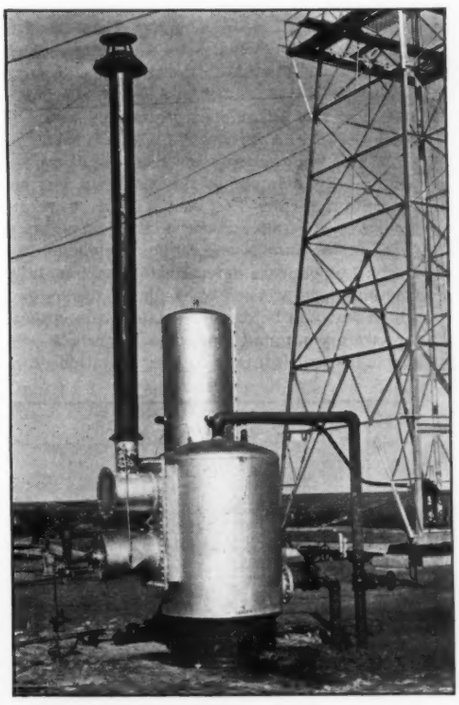


Rod Line Makes 90-Degree Turn Without a Swing

By using a pull rod linked to a post at one end and fastened to a link connecting the two pull rods a producer operating a pumping power in the Gainesville, Tex., field has effected a 90-degree swing. The rod linked to the post swings as the stroke is made, moving back and forth on a hickory wood support lubricated with cup grease, so that the pull on the rod leading to the power is transmitted to the rod connected to the well. Thus the operator was able to affect the proper angle with but little friction loss, and without the use of a swing.

Safety Stops Installed on Rod-Line Hold-Up

In the East Texas field one operator eliminated the hazard of kicking pull-rods when a breakage in the rod line occurs by welding pieces of five-eighths inch boiler plate to the tracks of the rod hold-up. Use of the safety stop also eliminates the trucks from jumping the tracks when the rod-line is unhooked from the central power .



Individual Treating Units

In the Moore field of Oklahoma an operator of some two dozen wells has installed individual treating units at each well instead of the central treating plant at the tank battery as in common practice. As different temperatures are required to treat the oil from the various wells in the field, this method offers a more accurate way of treating.

Simplified Absorption Control Cuts Natural Gasoline Loss

By G. M. LILJENSTEIN
Standard Oil Co. of California

The principal function of the absorption plant is to extract the salable gasoline from the gas. Therefore, a discussion of a procedure designed to control the loss of gasoline should be of prime importance, and here is discussed a method of controlling the isopentane plus content in the discharge gas.

The gasoline content of the gas leaving the absorber is due to two factors, namely, imperfect absorption and imperfect stripping. The extent of these losses can easily be regulated by means of adequate absorption and stripping controls. The methods to be discussed here have been found to be adequate and reliable.

C.N.G.A.—Presented before January 6, 1938, meeting at Los Angeles, Calif.

The absorption control is based on "The Theory of Absorption" developed by Alois Kremser of the Standard Oil Co. of California. This theory was presented to the association by Mr. Kremser in 1930, and full information pertaining to it will be found in C.N.G.A. Proceedings, Vol. 5, No. 2.

Figure 1 shows two curves representing the isopentane plus content of the discharge gas versus absorption factor. The curves show typical performance of similar absorbers, operating at pressures of 400 pounds and 60 pounds gauge, respectively. Losses were determined experimentally by fractional analysis and by the B. W. discharge test, which test will be discussed later. Absorption factors were computed using the formula shown on graph. By substituting fugacity relations for the partial pressure-vapor pressure relationship, the 60-pound and 400-pound curves can be reduced to a single curve.

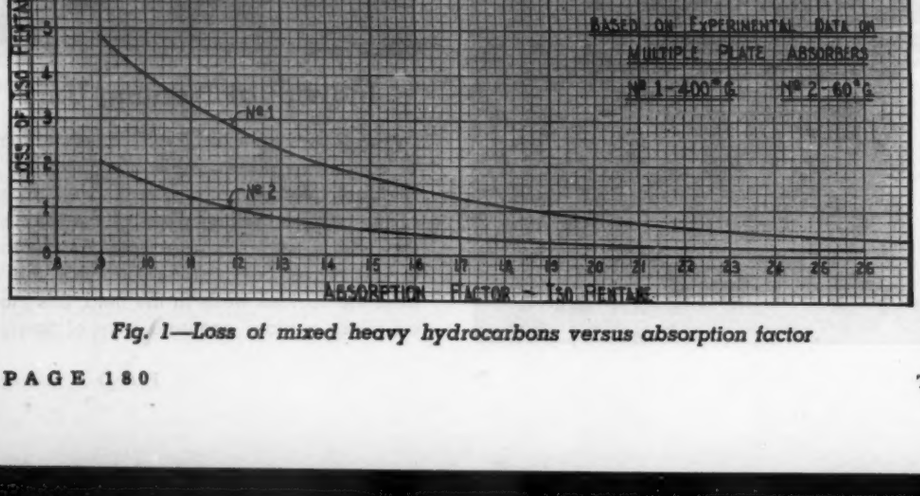

LOSS OF ISO PENTANE PLUS % OF INTAKE
ABSORPTION FACTOR = ISO PENTANE
No 1
No 2
A = K×C×P / C×P
A = ABSORPTION FACTOR
K = 22.2
C = OIL CIRCULATION GAL/MIN.
P = ABSORBER PRESSURE ABSOLUTE
p = V.P. OF ISOPENTANE AT TEMP AT BOTTOM OF ABSORBER
BASED ON EXPERIMENTAL DATA ON MULTIPLE PLATE ABSORBERS
No 1-400# G. No 2-60# G.

Fig. 1—Loss of mixed heavy hydrocarbons versus absorption factor

LEAN OIL VAPOR PRESSURE MM. HG. ABS.
STRIPPING FACTOR = ISO PENTANE
STRIPPING FACTOR CALCULATED FROM
S = K·L·P / p
S = STRIPPING FACTOR
K = CONSTANT = 40156
L = STEAM OIL RATIO
p = V.P. OF ISO PENTANE AT STRIPPING TEMP
P = STRIPPER PRESSURE ABS.

Fig. 2—Lean-oil vapor pressure versus stripping factor

The location and slope of the absorption factor curve will vary to a certain extent depending upon the properties of the lean oil and absorbed pentanes plus gasoline fractions, the number of plates in the absorber, and the plate efficiency. Absorption factor corrections can be applied to take care of variations in the properties of the lean oil, but the other variables are best taken care of by obtaining representative test curves experimentally.

However, it is not necessary to take these factors into consideration for plant control purposes. An arbitrary value of "K" can be used, providing the pentanes plus loss is determined experimentally against factors computed from this value. By means of this relationship it is possible to predict the gasoline content in the discharge gas due to imperfect absorption, when absorption factor and enrichment of intake gas are known.

The absorption factor to be used in individual plants will depend on the butane extraction desired and on an economic balance between loss of salable gasoline and operating costs. Except for peak loads of short duration it will usually be found economical to extract all but a negligible amount of isopentane plus by operating in the flat section of the curve. Usually, then, the gasoline content of the dry gas can be attributed to imperfect stripping.

Stripping Control

The loss due to imperfect stripping can be accounted for when we consider that the dry gas leaving the absorber will tend to reach equilibrium with the gasoline content of the oil entering. The greater the volume of gasoline in the oil the greater will be the loss from the absorber. To regulate this loss, a procedure designed to control the

enrichment of the lean oil and a test method that will properly indicate the partial pressure of the pentanes plus fractions in the lean oil are required. Stripping factor control in conjunction with lean oil vapor pressure determinations has been found adequate for this.

Figure 2 shows a typical relationship between lean-oil vapor pressure and stripping factor. Vapor pressures were determined experimentally in accordance with test procedure given in C.N.G.A. Bulletin S-343. Factors were calculated using formula shown on graph.

Theoretically, the stripping factor should be plotted against saturation of the lean oil. For plant control purposes, however, it is preferable to plot stripping factor against lean oil vapor pressure because the vapor pressure signifies the extent of the loss at the absorber due to imperfect stripping. This relationship should be determined for individual plants, because different curves will be obtained depending upon the saturation of the rich oil and upon the efficiency of the stripper.

By neglecting the slight variation in stripper temperature and pressure, it is possible to control stripping by maintaining a constant steam-oil ratio, choosing a ratio that will correspond to the flat portion of the curve. The degree of stripping required will depend upon the loss at the absorber. The value of this loss can be computed from the following formula which includes a correction for fugacity:

$$\text{L.O.V.P. loss} = (.0014 \times \text{L.O.V.P.}) + \frac{0.75 \times \text{L.O.V.P.}}{\text{absolute absorber press.}}$$

where L.O.V.P. is vapor pressure corrected to absorber temperature.

It will be noticed that the loss is dependent not only on magnitude of the L.O.V.P., but also upon absorber pressure and temperature, the loss increasing with an increase in absorber temperature and decreasing with an increase in pressure. The determined vapor pressure, usually obtained at either 80° F. or at 100° F., must be corrected to absorber conditions by interpolating to find the value at the temperature corresponding to the temperature at the top of the absorber. Lean-oil vapor pressure conversion curves shown in Bulletin S-343 can be used for this purpose. The absorber top temperature may be taken as the mean between temperature of oil in and temperature of gas out of absorber.

The relationships discussed above are used as a guide in determining the proper absorption factor and steam-oil ratio for individual plants. The plant crews are requested to maintain these factors to make changes necessary to insure efficient control.

It is necessary, then, that the operating crews be thoroughly familiar with all phases of the process and method of control. The management therefore provides the plant with operating instructions and a plant manual that gives a brief but clear concept of the process or operation together with formulas, graphs, equipment design, capacity versus load, etc., and expects the individual operators to familiarize themselves with this information and to be capable of calculating absorption and stripping factors.

Absorption is controlled by operator adjusting oil circulation rate to offset variations in gas load and oil temperature, to maintain a constant factor, using the absorption formula to calculate the oil circulation required. Stripping is controlled by adjusting the steam rate to the stripper to correspond to oil rate, to maintain a constant steam-oil ratio.

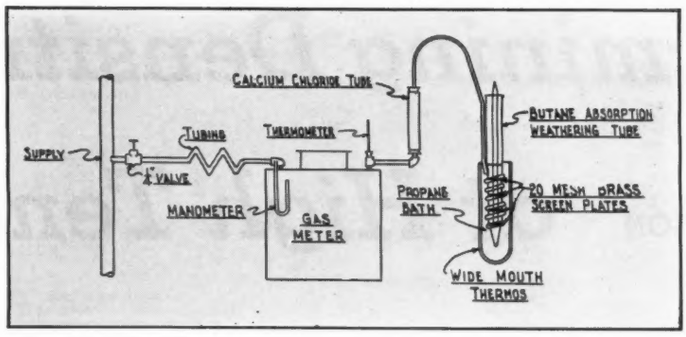


Fig. 3—Diagram of the "B.W." testing apparatus

Testing

Theoretically, if all conditions in the plant remained constant, it should not be necessary to check operation by tests, but as variations and irregularities do occur, tests are conducted periodically by a trained testing personnel to determine the gasoline content of the discharge gas and the vapor pressure of the lean oil to check the efficiency of absorption and stripping. The frequency of testing is dependent on the importance of the plant and degree of variations in operating conditions. Lean-oil vapor pressure tests are conducted more frequently than discharge tests, as the lean-oil vapor pressure is influenced more by minor operating changes than the absorption loss.

The lean-oil vapor pressure test is conducted according to procedure given in C.N.G.A. Bulletin S-343. It might be stated that some difficulty can be expected in obtaining accurate or check tests by an inexperienced operator, but by proper manipulation and by experience accurate and reliable results can be obtained.

The discharge test employed is known as the B. W. Discharge Test (see Figure 3). Details of test will not be given as these are available in C.N.G.A. Proceedings for February, 1935. Briefly, the test consists of passing a metered volume of gas through a standardized solvent contained in an absorption tube which is immersed in a propane bath. A sufficient volume of gas is passed through the solvent to provide at least 2 cc.'s of residue after solvent has been weathered to 34° F. (barometric pressure 760 mm. Hg.). This volume can be computed from the vapor pressure of the lean oil.

The enrichment of the discharge gas is calculated from the following formula:

$$G/M = \frac{R \times 0.1052}{M}$$

Where:

G/M = Isopentane plus in gallons per thousand cubic feet.

R = Test residue at prescribed temperature.

M = Meter reading corrected for temperature, pressure and meter factor.

The value of this test is that it gives a result equivalent to the isopentane plus content of the discharge gas in a fraction of the time required by fundamental analysis. Test can usually be completed in two hours, and results indicate that the test is very responsive to variations in plant operating conditions and so form a valuable guide for changes in operating instructions.

Copies of all discharge tests and L.O.V.P. determinations are forwarded to the plant and to the office where test data is reviewed by personnel concerned. Of particular value is the comparison of actual discharge enrichment to loss calculated from the vapor pressure of the lean oil, as irregularities in plant operation are readily apparent if values do not agree within a reasonable limit, taking into consideration any loss that may be due to low absorption factors.

Figure 4 shows relationship between B. W. Discharge enrichment and value computed from the vapor pressure of the lean oil, and represents data from seven plants operating at pressures ranging from 35 to 300 pounds gauge. Disagreements as shown on chart are followed up by special tests to locate cause of discrepancy. Disagreement may be due to testing errors, faulty meters, unbalanced absorbers, crude contamination, etc. The disagreements shown on graph were found to have been caused by insufficient factor in one case and to fouling of the absorber by crude oil in the other.

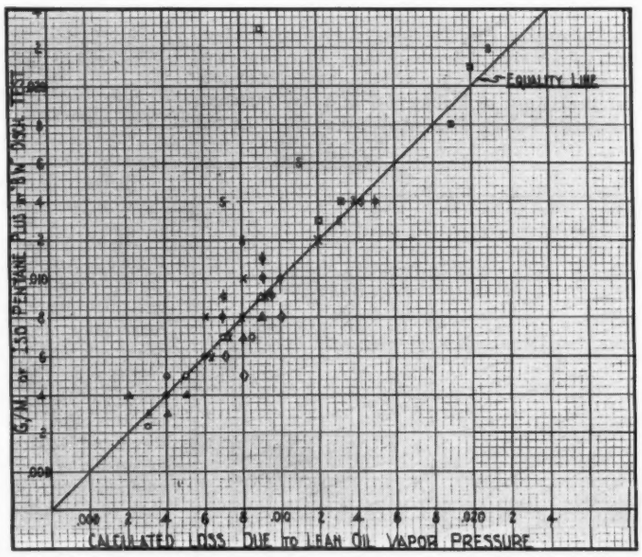


Fig. 4—Relationship between the "B.W." discharge (in gallons per minute) and the calculated loss due to lean-oil vapor pressure. (High absorption factor range)

Summary

1. The absorption factor and stripping factor relationships furnish a theoretically sound basis for the control of gasoline plant residue losses.

2. A trained plant personnel, educated to understand these relations and instructed to operate under specific absorption factor and stripping factor conditions, is the best possible assurance that residue losses will be under control continuously.

3. The above operating system is rounded out by the recording of all pertinent operating data on a plant log and by a testing schedule employing simple check-up tests, such as those described in the paper, and designed primarily to detect variations from expected performance. These variations are readily apparent by a comparison of the actual determined discharge content with value computed from the vapor pressure of the lean oil and from the absorption factor relationship.

4. The absorption-stripping factor control system coupled with review of plant logs and comparison of theoretical enrichments with actual test results, provides the executives and management with a method of supervising plant operation.

Determining Densities of Oils at High Temperatures

By W. L. NELSON

For many years the density of petroleum liquids has been computed by the use of tabulations published by the Bureau of Standards as in Circular 154 (May 1924) or Misc. Pub. 97 (1929) but these tables do not extend to high temperatures. Many charts of density as a function of temperature have been used but these are of nondescript character and may have been conceived more from necessity than by the use of actual data. The developments that follow are an attempt to correlate what authentic data are available, into a form that will be useful to plant engineers.

Perhaps the most complete data of this nature are those of Watson, Nelson and Murphy, and at least from the standpoint of consistency these data are the best that are available. However, in order to attain the high degree of precision that is evident in this paper, the authors found it necessary to resort to complicated relationships which involve a knowledge of many uncommon properties such as the pseudo critical temperature, characterization factor, etc. Such methods are time consuming, require extensive auxiliary data and are not suitable for many engineering purposes.

Correlation Method

The "theorem of corresponding states" was adopted as a means of correlating the scattered data. Many of the properties of a series of hydrocarbons or of similar materials may be studied by means of this theorem. The application of this theorem amounts mainly to expressing the property under consideration as a fraction of its value at the critical point. The values so obtained are referred to as reduced properties, i. e. reduced density, reduced pressure, reduced temperature, etc. When the reduced properties are plotted against one another in the form of a graph, only one curve results for all the different hydrocarbons or oils of a series, rather than a separate curve for each hydrocarbon or oil. Such a curve is shown in Figure 1 for the comparison of reduced density with reduced temperature. The values for critical density are fairly consistent for all types of oils but the critical temperature varies widely with type of oil and with width of boiling-range. In a few cases experimental values for critical density and temperature were available and in these instances the actual values were used rather than the values tabulated below.

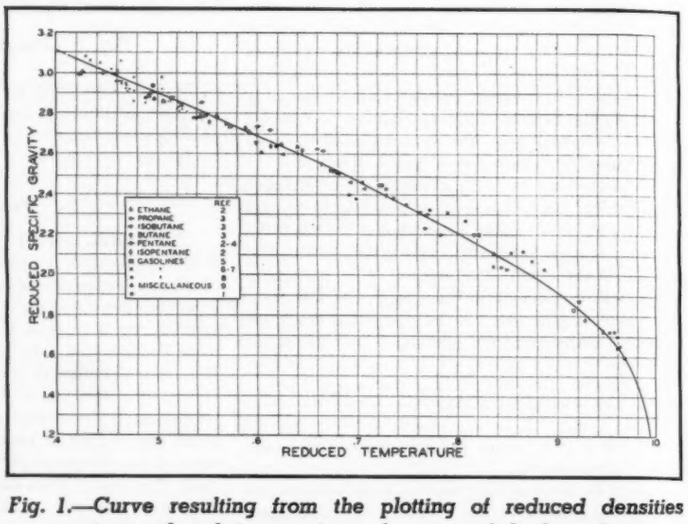


Fig. 1.—Curve resulting from the plotting of reduced densities against reduced temperatures for several hydrocarbons

The following average values of critical temperature and critical density were adopted by an inspection of the technical literature.

Specific gravity 60°/60°	Specific gravity at critical point	Critical temperature °F
0 64	0 24	390
0 70	0 247	485
0 75	0 26	595
0 80	0 263	712
0 85	0 275	880
0 90	0 286	1,015

All of the readily available data were platted in Figure 1. Among these were data for ethane[2], propane[3], isobutane[3], butane[3], isopentane[3], pentane[2,4], gasoline[5,6,7,8] and miscellaneous oils[1,9]. The data are reasonably consistent except the data for very heavy oils which are found in the upper left corner of the chart. The correlation indicates that the gravity of heavy oils should change less with temperature than the generally used data given in Circular 154. This circular gives the coefficient of expansion of oils of 15 to 35 A.P.I. gravity as .0004 whereas many other data indicate that the coefficient of expansion should be lower.

Working Chart

Although Figure 1 may be used directly by determining the critical temperature and density, the chart shown in Figure 2 will be found to be more convenient. In fact the whole purpose of the study here presented was to develop a convenient and complete chart of approximate densities. Most of the chart was taken from Figure 1 but the data for the pure hydrocarbons was plotted directly and the lines for the heavy oils (those whose specific gravity at 60 deg. F. is over 0.9) were plotted from Bureau of Standards data as given in Circular 154.

Another factor which enters into the shape of the curves given in Figure 2, is the pressure. Obviously the pressure must be increased as the temperature is raised, in order to keep the material in the liquid form. However, it is possible to in-

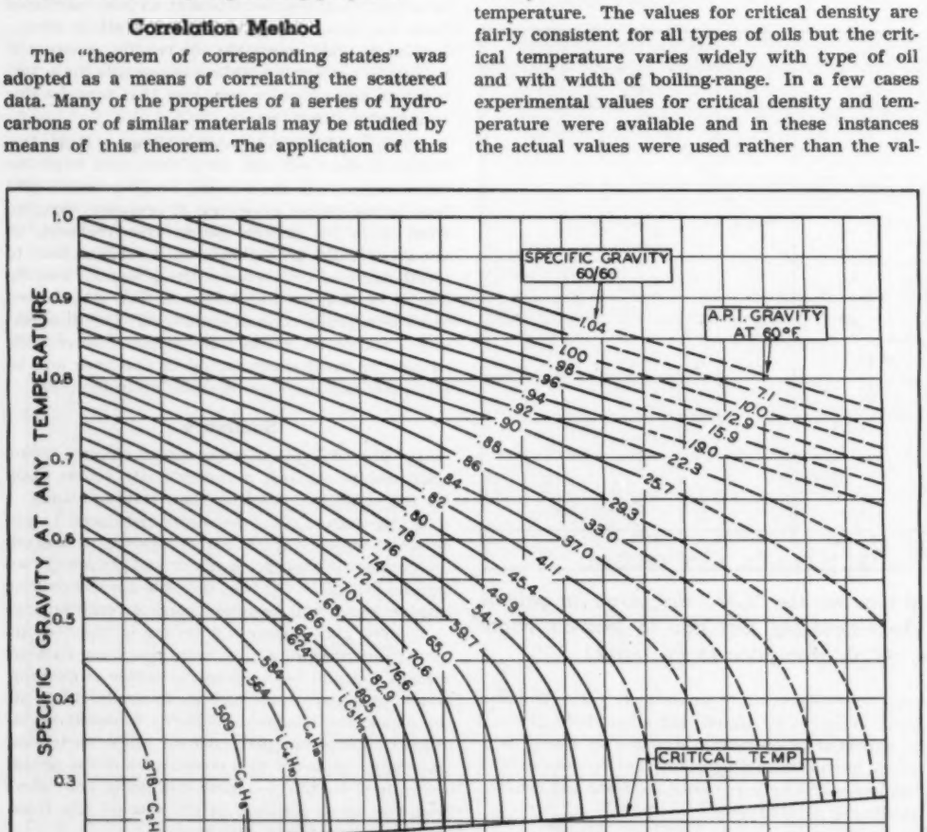


Fig. 2—Working chart for determining densities

crease the pressure to values higher than the critical pressure. The effect of pressure is not great unless the temperature is near the critical point and hence the slopes of the curves are not affected greatly by pressure except at the high temperature end. The data given in Figure 2 are for the relatively low pressures of 300 to 600 pounds per square inch which are of the magnitude of the critical pressures of the various oils—and if exceedingly high pressures, such as 1,500 pounds per square inch are encountered the curves will be even flatter than shown in Figure 2.

References

(1) Watson, Nelson & Murphy—The Oil and Gas Journal page 85, Nov. 12, 1936.

(2) International Critical Tables.

(3) Dana, Jenkins, Burdick, Timm—Refrigeration Eng. 12:389-404, 1936.

(4) Sidney Young—Various Sources.

(5) Bahlke & Kay.

(6) Lang, Jessel & Steed—J. Inst. Pet. Tech. 16, No. 85, 783, 1930.

(7) Lang & Jessel—J. Inst. Pet. Tech. 17, No. 95, 572, 1931.

(8) Cragoe & Hill—Bur. of Stds. Research Paper No. 393 (Dec. 1931).

(9) Bureau of Standards, Circ. 154, Misc. 98, and Tech. Paper 77.

Bureau of Mines Analyzes Oil From Maverick Springs, Wyo.

A sample of oil from the Maverick Springs field of Wyoming has been analyzed recently at the petroleum experiment station of the Bureau of Mines at Laramie, Wyo. The field is on the Shoshone Indian Reservation, Fremont County, Wyoming, in Township 6n-2w. The first well in the field was drilled in 1918. During the next nine years 32 wells were drilled to the Embar limestone where production was obtained at depths ranging from 1,100 to 1,800 feet. The differences in well depths are due largely to well-head elevations as positions of wells on structure account for only about 300 feet. It is estimated that these wells would produce about 6,500 bbls. daily. However, no transportation facilities have been developed; consequently, little oil has been produced except that necessary for production tests.

Most of the crude oil produced upon completion of the wells was placed in storage tanks at the field. A sample of oil was obtained from one of these tanks in June, 1930, at a time when no fresh oil from the field was available. The storage tank was of bolted steel construction, was painted red, and was not provided with vapor relief equipment. The length of time the oil had been in storage was not known, but all of the wells in the field had been inactive for a considerable time. The analysis of this sample was made by the Bureau of Mines at Laramie, and was included in Bureau of Mines Technical Paper 538.

In September, 1937, a fresh sample was obtained by flowing the Continental Oil Co. No. 7. A comparison of the two analyses shows that the stored sample had lost by evaporation virtually all of the material distilling to 200° C. (392° F.); otherwise, the samples are similar. The difference in percentage of kerosene distillate is due to the difference in the gravity of the distillates boiling between 225° C. and 250° C. (437° F. and 482° F.). By the Bureau of Mines method of interpreting Hempel analyses, a distillate having a gravity heavier than 40 degrees A.P.I. is considered a gas oil, although it may boil within the kerosene distillation range.

Results of analysis of the fresh sample of crude oil by the Bureau of Mines Hempel method follows: Yields of products as shown in the "approximate summary" should not be interpreted as the yields that would be obtained in a commercial refinery. N. A. C. Smith and E. C. Lane in Bureau of Mines Bulletin 291, explain in detail the method used by the bureau in interpreting Hempel analyses.

GENERAL CHARACTERISTICS

Specific gravity	0.923	A.P.I. gravity	21.8°
Per cent sulfur	2.91	Pour point	Below 5° F.
Saybolt Universal viscosity at 100° F.	259 sec.	Color	Black

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Barometer 586 mm. First drop: 117° C. (242° F.)

Dry distillation, Temperature °C.	Per cent cut	Sum per cent	Sp. gr. of cut	°A.P.I. of cut	Viscosity at 100° F.	Cloud test, °F.	Temperature °F.
Up to 50	....	....	.....	....	....	....	Up to 122
50- 75	....	....	.....	....	....	....	122-167
75-100	....	....	.....	....	....	....	167-212
100-125	0 5	0 5	0 731	62 1	....	....	212-257
125-150	2 0	2 5	743	59 0	....	....	257-302
150-175	2 8	5 3	764	53 7	....	....	302-347
175-200	3 2	8 5	785	48 8	....	....	347-392
200-225	4 5	13 0	807	43 8	....	....	392-437
225-250	5 2	18 2	822	40 6	....	....	437-482
250-275	7 4	25 6	840	37 0	....	....	482-527

APPROXIMATE SUMMARY

	Per cent	Sp. gr.	°A.P.I.	Viscosity
Light gasoline—				
Total gasoline and naphtha	8 5	0 765	53 5	.....
Kerosene distillate	9 7	815	42 1	.....
Gas oil	12 7	852	34 6	.....
Nonviscous lubricating distillate	14 2	0 874-0 907	30 4-24 5	50-100
Medium lubricating distillate	11 5	907- 923	24 5-21 8	100-200
Viscous lubricating distillate	2 9	923- 928	21 8-21 0	Above 200
Residuum	40 3	1 011	8 4	.....
Distillation loss	0 2	.....	.....	.....

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Pertinent Factors of Gas Pipe Line Costs and Design

By FRANK R. YOUNG
Consulting Engineer, Wichita, Kans.

In undertaking the design of a gas pipe line, the engineer will find a half dozen different formulas available for his use. The so-called "Weymouth" formula is recommended as being probably as near standard as any today. Before discussing pressure problems and pipe line capacities, a brief resume of gas characteristics may be in order.

Matter is stated to exist in three different forms: solid, liquid and gaseous. Liquids and gases are fluids. A liquid is a fluid which, if a certain volume be introduced into a vessel of greater volume, it occupies a portion of the vessel equal only to its own volume. A gas is a fluid of such nature that if a certain volume be introduced into a vessel, whatever the volume of the vessel may be, the gas will distribute itself throughout the vessel.

When a space occupied by a given volume of gas is changed, both its pressure and temperature are changed in accordance with the following laws:

Boyle's law: At constant temperature, the absolute pressure of a gas varies inversely as its volume.

Charles' law: At constant pressure, the volume of a gas is proportional to its absolute temperature.

In the ordinary process of gas compression, therefore, two elements are at work toward the production of a higher pressure: (1) The reduction of volume by the advancing piston. (2) The increasing temperature due to the increasing pressure corresponding to the reduced volume. When making calculations involving the laws of gases, pressures and temperatures should be expressed in absolute units.

Absolute Temperature

Early experimenters noted that a definite quantity of gas occupying a definite volume at any certain pressure, decreased in volume when cooled. For example, 6 cubic feet, at 140° F., when cooled to 90° F., occupied only 5.5 cubic feet. Further cooling to 40° F. reduced the volume to 5 cubic feet, and at —60° F. the volume was 4 cubic feet.

Physicists have determined absolute zero at about 459.6° below Fahrenheit zero, or as commonly expressed in gas calculations, absolute zero is —460° F. Absolute temperatures, therefore, are obtained by adding 460° to the Fahrenheit scale. Sixty degrees Fahrenheit equals 60 + 460 = 520° absolute. One hundred sixty degrees below zero, Fahrenheit, equals 300° F., absolute.

Standard atmospheric pressure as adopted by the U. S. Weather Bureau is 14.696 pounds per square inch, at about 100 feet elevation above sea level. In gas calculations, atmospheric pressure is taken to be 14.4 pounds which seemed to be a fair average for the country's gas fields. The solution of problems in gas measurement are simplified by adding 14.4 to the gauge pressure which gives the absolute pressure. If the gauge pressure is 10 pounds and the atmospheric pressure 14.4 pounds, the absolute pressure is 24.4 pounds. The absolute pressure is defined as the total pressure acting on a surface.

The absolute pressure of any definite weight of gas at constant volume decreases as the absolute temperature decreases, and vice-versa. The following formula is based on this law:

$$Pn = \frac{P\ Tn}{T}$$, in which,

P = Absolute pressure in pounds per square inch absolute.

Pn = New absolute pressure.

T = Absolute temperature in degrees F.

Tn = New absolute temperature.

Problem: If the pressure of a certain volume of gas is 14.65 pounds per square inch, absolute at a temperature of 40° F., what will the pressure be at 60° F?

Answer:

$$Pn = \frac{P\ Tn}{T} = \frac{14.65 \times 520}{500} = 15.24$$ pounds per square inch absolute

In determining the specific gravity of gases, air is used as standard. The specific gravity of a gas is the ratio of its density to the density of air. Most natural gases fall within the range .60 to .70 specific gravity and in the tables used for calculation of gas flow problems, the specific gravity of gas is usually stated to be .60.

Gas can be weighed but it is not commercially practicable to measure it by this method. In order that gas can be measured in cubic feet, each of which will contain a definite weight, the absolute pressure and temperature conditions of the gas at which the cubic feet is assumed to be standard, must be specified.

It has been proposed to standardize the measurement of gas by taking the average atmospheric pressure of 14.4 pounds per square inch absolute, and adding 0.25 pounds (four ounces) which is the average pressure existing in low pressure gas distributing systems. This would give 14.65 pounds pressure absolute at a temperature of 60° F. Many engineers use the figure 14.65 but it has not been generally adopted so it is necessary in gas calculations to express the problem in certain absolute pressures and temperatures.

Pipe Line Capacities

As has been stated, several different formulas are available for estimating the rate of flow of gas through pipe lines. One commonly used, is proposed by Thomas R. Weymouth and it probably represents the average maximum capacities for new lines built under present conditions. The Weymouth formula for transmission of gas is:

$$Q = \frac{871\ D^{2.667}\ \sqrt{Pu^2 - Pd^2}}{\sqrt{L}}$$, in which,

Q = Quantity in cubic feet per day at the following conditions: base pressure, 14.65 pounds absolute; base and flowing temperature, 60° F.; specific gravity .60.

D = Actual internal diameter of pipe in inches.

L = Length of line in miles (from point of upstream pressure to point of downstream pressure.)

Pu = Upstream or inlet pressure in pounds per square inch absolute, (atmospheric plus gauge pressure.)

Pd = Downstream or outlet pressure in pounds per square inch absolute, (atmospheric plus gauge pressure.)

It should be noted that the above formula represents ideal pipe line conditions; new, clean, smooth pipe. Factors which may reduce the results obtained by the formula are, pipe roughness, accumulation of sediment, water or gasoline; and leakage. The values resulting from the formula might reasonably be reduced 10 per cent as a matter of safety.

The general formula, above, for pipe line capacities can be divided into two parts, (1) the pipe line coefficient and (2) the pipe line pressure extension.

The pipe line coefficient is expressed by the formula:

$$C = \frac{871\ D^{2.667}}{\sqrt{L}}$$, in which,

C = Pipe line coefficient. It is the quantity in cubic feet which will flow through L miles of line, D inches in diameter in 24 hours when the upstream pressure is 1 pound per square inch absolute and the downstream pressure is zero absolute, base and flowing temperature 60° F., specific gravity, .60.

The pipe line pressure extension is expressed by the formula:

$E = \sqrt{Pu^2 - Pd^2}$, in which,

E = Pipe line pressure extension.

Pu = Upstream gauge pressure in pounds plus 14.4.

Pd = Downstream gauge pressure in pounds plus 14.4.

The estimated capacity of a pipe line is equal to the product of the coefficient "C," multiplied by the pressure extension "E."

Problem: If the pressure at the upstream end of a 10-inch pipe line is 300 pounds and at the downstream end, 40 miles distant, the pressure is 100 pounds, gauge, what is the capacity of the line between the two points?

Solving for C, we have:

D = 10 inch nominal or 10.02 actual diameter.

$10.02^{2.667} = 467(871) = 406757$

L = 40 miles. $\sqrt{40} = 6.32455$

$\frac{406757}{6.32455} = 64313 = C$

Now, solving for E, we have:

Pu = 300 + 14.4 = 314.4

Pd = 100 + 14.4 = 114.4

$\sqrt{314.4^2 - 114.4^2} = 292.8\ E$

Then, Q = CE = 64313 × 292.8 = 18,800,000 cubic feet per day.

In calculating the capacities of looped lines, the coefficients and extensions are used in a similar

manner, that is, the coefficient of the loop system is the sum of the coefficients of the two lines and the extensions are calculated the same as for a single line.

Example: (See Figure 1) Two line are joined together at both ends. One line is 10-inch, 30 miles long and the other line is 8-inch, 40 miles long.

The coefficient of the loop system is the sum of the coefficients of the two lines.

C for 30 miles of 10 inch line = 74,200
C for 40 miles of 8 inch line = 35,030

C for both lines = 109,230

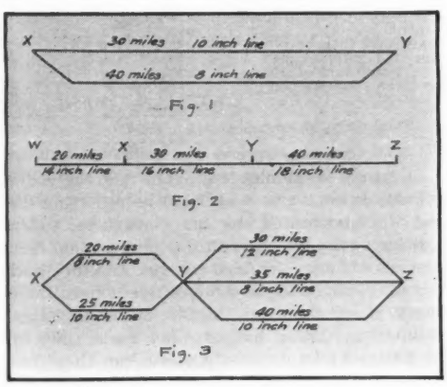
If the upstream gauge pressure is 350 pounds and the downstream pressure is 50 pounds, then E = 358.7.

Q = CE = 109,230 × 358.7 = 39,200,000 cubic feet per day.

(Note: The Natural Gas Handbook, by John C. Diehl, published by the Metric Metal Works, is the authority for this discussion on pipe line capacities. This handbook contains tables of coefficients and extensions covering a wide range of varying conditions. The use of these tables eliminates many of the laborous computations required for solving "C" and "E" and in addition, discusses looping, equivalent lengths and other problems concerning pipe line flow in a full and simple manner. The engineer interested in gas pipe line calculations will find the handbook an invaluable aid.)

Temperature-Specific Gravity

We have seen above that temperature affects the character of gas and in order to estimate correctly the flow of gas through a pipe line, we must correct the flowing temperatures and specific



gravity to the base conditions stated in the coefficient formula. If the flowing temperature is 60° F., and the specific gravity is .80, the capacity at the base conditions is 87 per cent of the calculated capacity arrived at by formula. The following table is from the Natural Gas Handbook, by John C. Diehl.

TEMPERATURE-SPECIFIC GRAVITY MULTIPLIERS

Spec. gr.	Flowing Temperature in Degrees F. 30	40	50	60	70	80	90	100
0.60	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96
0.65	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.93
0.70	0.95	0.94	0.93	0.93	0.92	0.91	0.90	0.89
0.75	0.92	0.91	0.90	0.89	0.89	0.88	0.87	0.86
0.80	0.89	0.88	0.87	0.87	0.86	0.85	0.84	0.83
0.85	0.87	0.86	0.85	0.84	0.83	0.82	0.82	0.81
0.90	0.84	0.83	0.82	0.82	0.81	0.80	0.79	0.79
0.95	0.82	0.81	0.80	0.79	0.79	0.78	0.77	0.77
1.00	0.80	0.79	0.78	0.77	0.77	0.76	0.75	0.75

Equivalent Lengths

In determining the capacity of a line composed of sections of pipes of different diameters, each section must be expressed as the equivalent length of a line of selected diameter, the coefficient of which is the same as the coefficient of the section. Referring to Figure 2, we have,

20 miles of 14-inch, C = 191,500 = C of 42.3 miles of 16-inch line.

30 miles of 16-inch, C = 227,400 = C of 30.0 miles of 16-inch line.

40 miles of 18-inch, C = 273,600 = C of 20.7 miles of 16-inch line.

Total line is equivalent to 93.0 miles of 16-inch line.

The coefficient, C, for the three sections which are equivalent to 93.0 miles of 16-inch line, is 129,300. If the upstream gauge pressure at W is 250 pounds and the downstream pressure at Z is 50 pounds gauge, the pressure extension, E = 256.4. Then Q = 129,300 × 256.4 = 33,200,000 cubic feet per day, capacity.

Multiple Loops

The calculation of a series of loops, (see Figure 3) is as follows:

20 miles 8-inch, C = 49,540
25 miles 10-inch, C = 81,290

Total C = 130,830

30 miles 12-inch, C = 120,000
35 miles 8-inch, C = 37,450
40 miles 10-inch, C = 64,260

Total C = 221,710

Converting to equivalent lengths, we have,

130,830 = C for 42 8 miles of 14-inch line, X to Y
221,710 = C for 14 9 miles of 14-inch line, Y to Z

Making a total 57 7 miles of 14-inch line.

The coefficient of the system therefore is equal to the coefficient of 57.7 miles of 14-inch line, or 112,700.

If the upstream gauge pressure at X is 220 pounds and the downstream pressure at Z is 50 pounds, the pipe line pressure extension, E = 225.4. The capacity of the loop will then be, 112,700 × 225.4 = 25,400,000 cubic feet per day.

By the use of the coefficients and pressure extensions described above and set forth more fully in the tables in the Natural Gas Handbook, considerable ingenuity can be exercised by the engineer in attaining maximum economy in gas pipe line design. One phase of gas line design which differs greatly from oil or water line design is that pressure drop in gas lines is along a curve instead of a straight line as in liquid flow. The characteristics of gas line pressure loss show that a rapid reduction of pressure drop takes place in the ranges of low pressure. This means, other things being equal, that in order to save horsepower, it will be found economical to provide sufficient compressor capacity so that a fairly high intake pressure will be available at the downstream end when gas is to be boosted by another compressor plant. This decreases the horsepower required to transmit gas through a long pipe line. The proper economic balance between pipe size, line capacity and pressures is one which the engineer strives to achieve. By the aid of the coefficient and pressure extension tables, alternative and experimental designs may be worked out quickly and accurately, permitting a detailed study of different combinations and conditions of flow.

Economics of Pipe Line Design

The problems which the engineer has to solve are twofold, namely: (1) Design and cost of the pipe line and compressor stations, and (2) the operating cost of the system. Obviously the design will have an important bearing on the operating cost. If the pipe line is too small, high pressures with their resulting high costs may, in a few years time, pay for a little larger line and the larger line may, in the end, result in a tremendous saving.

It is not always possible to ascertain in advance just what capacities and conditions are to be met in a proposed gas line system. One of the largest items of cost is the pipe and where a definite maximum quantity of gas is to be transmitted in one direction at certain definite inlet and outlet pressures, a line in which the size of pipe gradually increases as the pressure decreases, will be more economical than a line of uniform diameter. Theoretically, the economical type of construction is one in which the pressure decreases at a uniform rate for each unit of length and the thickness of the pipe such that the safe working pressure of the pipe at any point is equal to the maximum line pressure at that point.

If capacities and pressures are known in advance, it will be uneconomical to build a line, all the pipe of which has the same wall thickness. If the upstream pressure is, say, 450 pounds and the downstream pressure, 50 pounds, lighter pipe can be used on the lower end. The ideal would be a gradually diminishing weight of pipe throughout the whole length but as this is not commercially feasible, approximately the same objective can be accomplished by reducing wall thickness in sections, as the line extends away from the compressor station and increasing the diameter of the pipe.

For example, a line 60 miles in length may be constructed in the following manner: The first three sections consist of four miles each of 10-inch pipe, in which the weight of each section decreases as the pressure decreases. The next section, 20 miles of 12-inch pipe and the last section 28 miles of 14-inch pipe, with decreasing wall thickness in each section so the safe working pressure of the pipe is equal to the maximum line pressure. This design has the advantage of low initial cost but if, for any reason, the capacity had to be increased, loops would have to be built if inlet and outlet pressures remained the same, in order to prevent the pressure at any point from exceeding the maximum safe working pressure of the pipe.

One method of determining the proper wall thickness of pipe is to plot the flow gradient graphically in terms of pressure and length; then above it, plot the safe working pressure of the pipe to be used (say, 50 per cent of mill test). By this means, safe working pressures can be converted back into wall thicknesses and the decreasing weights of pipe thereby developed.

Costs

It is impossible to set down even the theoretical cost of a pipe line system unless all of the factors involved are available for study. The following discussion of costs does not presume to be an estimate of any particular gas line; rather it is to be taken as a discussion of the various items which go to make up capital and operating costs of a gas pipe line system. Some of the costs may be, and probably are, highly debatable. Local conditions will alter some of the costs but in a general way the items will show what costs, if not amounts, will be incurred in the construction and operation of a gas pipe line system. Before tabulating the costs, a brief discussion of them may be helpful.

Capital Expenditure

First Cost. This includes the cost of the pipe and the cost of the compressor stations, also the cost of a telephone line. The total of these three items represents the total capital expenditure necessary.

Operating Costs. These include a summary of the various fixed charges and operating charges which are extended to show the costs in dollars per day and the costs per MCF of gas transported. Taking up these items individually, we have:

Interest Charges. An interest charge of 6 per cent on the capital investment is included in the operating costs as a fixed charge. The form of capital structure that might be used for a pipe line may vary but it is necessary to charge interest. Actually, the interest should be reduced from year to year as the project earned back increments of the capital but in the interests of conservative financing, interest at 6 per cent may be charged on

the entire capital outlay for the entire period of amortization.

Amortization. Amortization of the entire capital investment is regarded as a fixed charge and in this paper it has been calculated at 10 per cent per annum. Due to the highly migratory character of natural gas which results in uncertainties of supply over extended periods, it is considered dangerous to use a low rate of amortization in a gas line project. The hazardous nature of the natural gas business justifies a high and rapid return of capital, at least until the project has been amortized.

Transportation Losses. There should be only a small actual loss of gas in a modern welded pipe line, provided frequent and careful tests of the line are made. Differences in metering may account for some of the differences between input and output of a gas line but in the best of lines, some losses can be expected. In this estimate, 2 per cent is charged for transportation loss.

Risk Factor. A risk factor has been added which is more or less a safety factor on the operation and construction of the pipe line. It is to take care of major line breaks, law suits and general uncertainties of the business. This item is taken at the rate of 3 per cent per annum on the entire capital investment.

Taxes and Insurance. Taxes have been calculated on a basis of 2 per cent on a 40 per cent valuation of the equipment. This item is uncertain of course, the trend being toward higher taxes. Insurance is estimated to conform to current rates.

Pipe Line Maintenance. This item includes the regular patrolling of the line once each day as well as the regular upkeep of the line. Upkeep includes local reconditioning, lowering and raising where necessary to conform to new road grades and various minor items of construction which arise from time to time. It does not include, however, any allowance for major realignments or reconstruction, which are cared for by the risk factor.

Supervision and Overhead. This item allows for competent management, clerical and accounting staff as well as office and general overhead expense. This had been estimated at $100,000 per year.

These charges cover the direct operating costs and are detailed as follows:

Wages and Salaries. This item includes salaries and wages of a superintendent, chief operator, the required number of operators per shift and a roustabout at each station.

Oil. The lubricating oil consumption is estimated at 10 gallons per day per engine-compressor and the oil is charged at $1.00 per gallon.

Fuel. Gas taken from the line is usually used for fuel. Fuel gas is figured in this estimate at 1,100 B.t.u. and fuel consumption by the compressor engines is estimated at 9 cubic feet per b.hp. hour. Cost of fuel is estimated at 10 cents per 1,000 cubic feet. For the pipe line described below, the horsepower requirement has been calculated at 18,000 total horsepower, and would consume about 2,592,000 cubic feet at the initial station and 1,296,000 cubic feet per day at the intermediate booster plant or a total for the line of 3,888,000 cubic feet per day.

Repairs. Repairs are estimated at the rate of 2 per cent per annum on the original cost of machinery.

Electric Power. The electric power for auxiliary equipment has been estimated at 200 horsepower per station at a cost of 1 cent per kw.h. If the current were generated at the plant, the cost might not be much less.

Sundry Material Expense. This item includes incidental expense for such materials as paint, waste, brooms, grease, tools and the like.

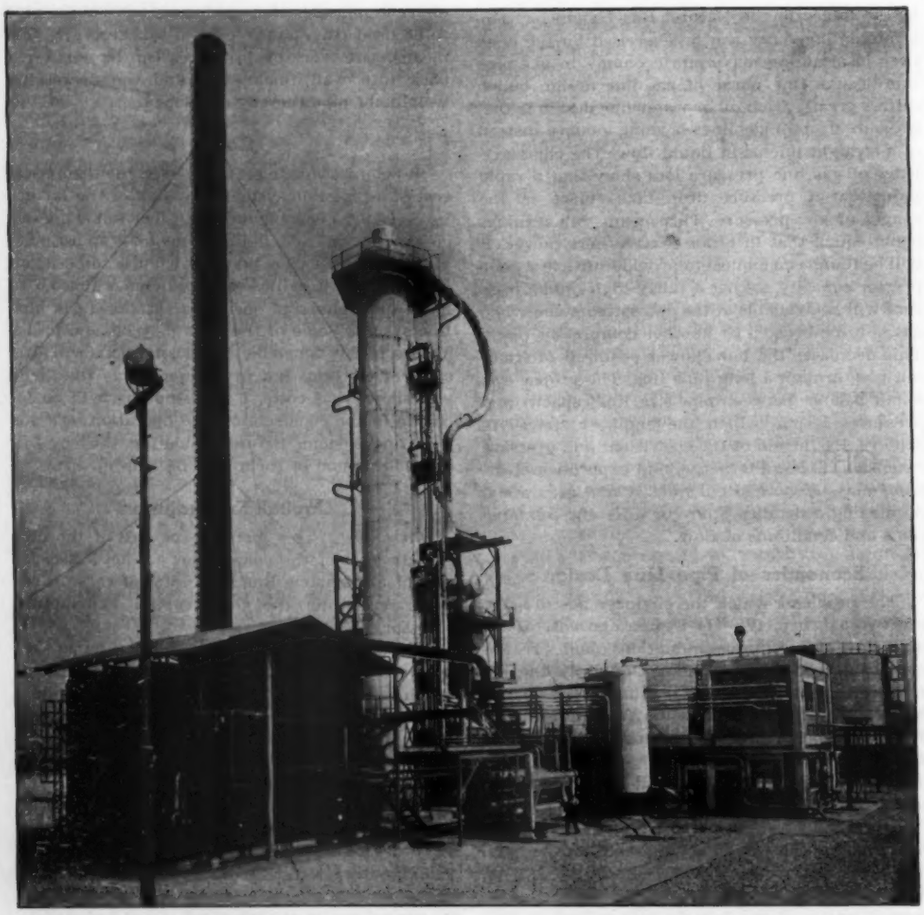
Cooling Water Supply. It is very difficult to estimate the amount of water required for circulation over the cooling tower coils. The temperature of the gas, wind velocities and evaporation make great differences in the water consumption until a definite design of the pipe line and the compressor stations is made. A two-stage compressor station will require more water than will a single-stage compressor station and the consumption of water will vary according to the pressures and temperatures of the gas being transmitted. Also, operating pressures and temperatures will vary according to the location of the compressor stations. A further uncertainty in estimating the total cost of cooling water is the rate per barrel at which it can be purchased or produced. An attempt has been made in this estimate to arrive at a reasonable average by using a rate of 50 cents per 100 cubic feet, or 2.8 cents per barrel.

Estimated capital and operating costs of a 20-inch gas line, 300 miles long, transmitting a total of 75,000,000 cubic feet per day, using 18,000 total horsepower.

Estimate	
Capital Expenditure—	
20-inch line, complete, 300 miles long at $30,000 per mile	$ 9,000,000
2 compressor stations, 18,000 total horsepower at $100 per horsepower, installed	1,800,000
300 miles telephone line at $900 per mile	272,000
Total capital investment	$11,072,000

Operating Costs	Per Day	Cents/MCF of gas compressed
Fixed Charges—		
6% interest on capital investment	$1,820	2 426
Amortization at 10% per year	3,033	4 044
Total fixed charges	$4,853	6 470
Direct Operating Costs		
Transportation loss—2% at 10c per MCF	$ 150	0 200
Risk—3% on capital investment	910	1 213
Taxes and insurance	233	0 310
Pipe line maintenance	230	0 307
Supervision and overhead	275	0 367
Operation, compressor stations	1,262	1 683
Total direct operating costs	$3,060	4 080
Total operating expenses	$7,913	10 550

It should be emphasized again that the above estimate is not to be considered as reflecting the cost of a comparable pipe line constructed today. A different capital expenditure, amortization rate, interest, will alter the fixed charges. And the direct operating costs may be quite different from those shown above, owing to higher or lower taxes, maintenance, labor, fuel or other costs. Only by the analysis of a definite problem can these factors be evaluated and properly estimated.



Distillation unit with heater and power house at A.G.I. refinery in Venice, Italy

Oil Emulsions to Be Discussed Before East Texas A.P.I.

At the next meeting of the East Texas chapter of the American Petroleum Institute, Division of Production, which will be held in the High School Auditorium, Kilgore, Tex., on Tuesday evening, February 15, the subject of "The Prevention and Treatment of Emulsions in the East Texas Field" will be discussed by B. M. Givens of the Sun Oil Co.

Mr. Givens has had considerable experience in handling oil emulsions, particularly in the East Texas field, and is considered an authority on the subject from the field standpoint. His discussion of this most interesting subject should prove of much value to all operators in the East Texas field.

F. G. Beckman from Muskogee, Okla., will discuss the subject of "The Completion of Wells in the East Texas Field by the Reverse Circulation Method." A number of wells have been completed in the East Texas field by this method and it is believed by many operators to be the best method of completing wells in the East Texas field.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Evaporation Losses of Gasoline While In Storage

I am interested in securing data on the evaporation and shrinkage of various gravity gasolines, kerosenes, stove oil and diesel fuel due to temperature fluctuations. This information is desired on products stored in above-ground vertical and horizontal tanks ranging from 10,000 to 300,000 gallons. Any information will be appreciated.—P. F. M.

Evaporation losses of petroleum liquids are confined almost entirely to crude oils and gasoline. The boiling points of kerosene and heavier products are too high for any appreciable evaporation to take place under normal storage conditions. The largest losses of crude oils are from those oils of the higher gravity groups and the natural gasolines with the lower boiling temperatures may suffer large losses due to evaporation.

The most important factors, aside from the volatility of the liquid, that have to do with these losses are—the type of tank used for storage, temperature, pressure and circulation of vapors within the tank.

There are no data available showing the exact losses at each stage of handling petroleum and the products from the well through field storage, transportation, manufacture and distribution. A reasonable loss for storage in the field of the crude oil of good grade, 34-36° A.P.I. gravity, appears to be in the neighborhood of 2 to 3 per cent per year, with possibly another 1.5 per cent for transportation. Refining losses vary with the type of refinery, a loss of 2 per cent may be considered good operation. Bulk storage of gasoline has been reported to show 3.5 per cent. The losses allowed for tax purposes by the various states for gasoline vary all the way from zero to 4 per cent. The overall loss from well to consumer has been stated by various authorities to run from 7.5 to 10 per cent.

Considerable progress has been made in reducing losses of oil and gasoline in storage through the invention of storage tanks adapted for the purpose. The largest losses are due to vapor space, and movement of the vapor, above the liquids. The vapor space has been eliminated in the floating roof tank. A breather roof provides control of variable volume of vapor, reducing losses of gasoline vapors to practically nothing. Increase of pressure due to temperature change, is now cared for in the special tanks with hemispherical heads and those of spherical or spheroid shape. These tanks are designed to withstand any pressure that may vary with the volatility.

References: U. S. Bureau of Mines, Cirs. 2,531, 2,677, 2,834 and 3,138; T.P. 585. D. E. Larson, Evaporation Losses From Petroleum Products, World Petroleum Congress, London, July, 1933.

Tannin As Crude Oil Deodorant

Is there any substance suitable for deodorizing crude oil?—S. A.

The removal of the odor from crude oil would require a special and thorough chemical treatment, the nature of which would depend upon the substances responsible for the odor.

An oil containing a large quantity of hydrogen sulfide might be treated with water and sodium hydroxide to remove the very objectionable odor due to hydrogen sulfide. The characteristic petroleum odor would remain.

Some crude oils which have only a slight petroleum odor are used in certain toilet preparations, to which substances have been added to simply cover or mask the odor. Numerous deodorants and cheap perfumes are used for this purpose. Among the important deodorants are tannic acid and oil of mirbane.

Explosive Gas-Air Mixtures Cannot Be Ignited in Oil Sands

Your reply to M.C.C. December 9 re Explosive Limits of Mixtures of Air and Hydrocarbon Gases, giving the limits for such mixtures in fairly large spaces. In pumps, casing, etc., the mixture should remain outside these limits. In the fine pores of a sand, however, I have been informed that the heat of combustion of an explosive mixture would be absorbed by the rock too rapidly to permit propagation. Therefore, repressuring a sand with air cannot cause explosions within the sand. Is this true?—C. W. W.

Any combustible substance must be heated to its ignition point before combustion will occur; this temperature is definite for each combustible substance. Combustion means the chemical combination of two substances with enough energy to produce light and heat. When both light and heat are slight, the combustion is said to be slow; when they are extensive, the combustion is rapid, and if instantaneous it is explosive. Each change of this sort is exothermic, that is, the reaction causes heat to be evolved to produce a definite temperature.

It is customary to consider one of the substances as the combustible, the other the supporter of combustion. Air (oxygen) is the most active of all supporters of combustion. While not strictly true in the chemical meaning, air, or oxygen, is considered essential to combustion.

When the ignition point is lower than the temperature of combustion, for any substance, the material, when once ignited, will continue to burn, without further application of heat; the flame being propagated from particle to particle by the heat produced from its own combustion. This is ordinary combustion. When once the temperature is reduced below the ignition point any combustion will cease. A burning flame surrounded with a cooling medium, producing an extremely low temperature, is extinguished. This is commonly demonstrated by lowering a piece of fine wire gauze into a gas flame. The flame will not continue above the gauze, although it may be shown that gas is passing through by bringing a lighted match above the gauze. The explanation is that the wire conducts the heat away so rapidly that the temperature is reduced below the ignition point so the flame particles cannot be propagated through the metal gauze.

The conditions briefly discussed, when considered in connection with the chance for explosions within an oil sand are clear. The particles of sand take the place of the metal in the gauze, they are so numerous that the heat of any spark or flame introduced at the face of a sand would be dissipated so quickly that there would be neither simple combustion nor explosion, within the sand. Certainly, the air could not be supplied in a manner suitable for continuous combustion throughout an oil sand, because the voids are so small and so completely surrounded with particles.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Ethylene Glycol
(Glycol)

Use—Antifreeze solutions, liquid coolant for gasoline engines, hydraulic devices, etc.

Form—Colorless, hygroscopic liquid.

Formula—$CH_2OH.CH_2OH$.

Specific gravity—1.1150.

Boiling point—387° F.

Solubility—Water all proportions.

LIMITATIONS

Color	water white
Boiling range	374° to 410° F.
Water, max., per cent	0.5
Ash, max., per cent	0.1

Note. Ethylene glycol 60 per cent and water 40 per cent freezes at minus 56° F.

Octane Numbers of Hydrocarbons

Could you supply a list of the most powerful hydrocarbons for octane value? I understand that position of certain groups influence this and I want the names of these especially.—G. E. K.

Numerous lists have appeared in the literature showing the octane ratings of the lower hydrocarbons. The values quoted below are by Egloff.

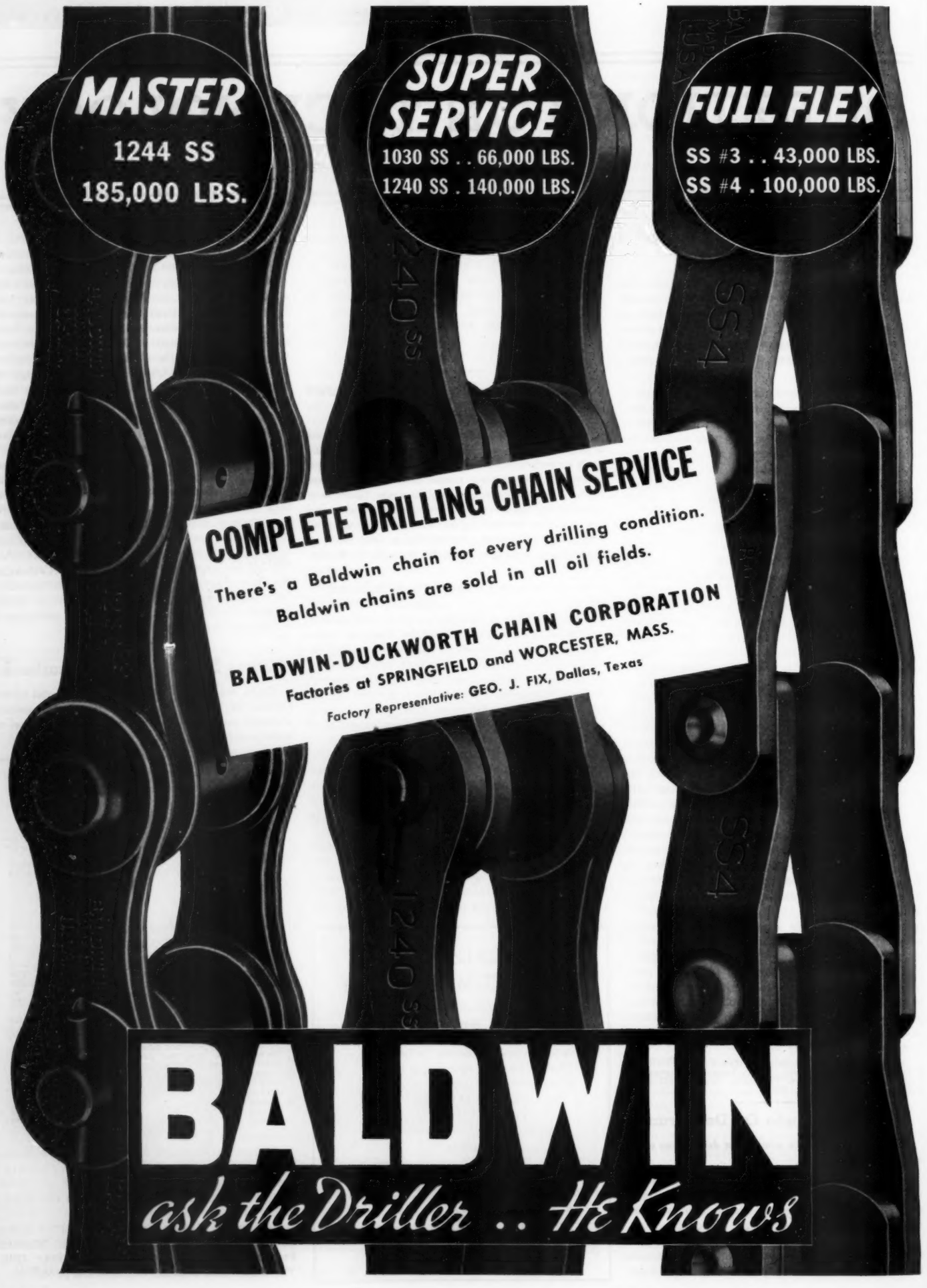
OCTANE RATINGS OF HYDROCARBONS
(C.F.R. Motor Method)

Name—	Formula symbol	Octane number
Paraffins:		
Methane	CH_4	*125
Ethane	C_2H_6	*125
Propane	C_3H_8	*125
Butane	C_4H_{10}	91
Isobutane	C_4H_{10}	99
Pentane	C_5H_{12}	64
2, 2-Dimethylpropane	C_5H_{12}	83
2-Methylbutane-isopentane	C_5H_{12}	90
Hexane	C_6H_{14}	59
2, 3-Dimethylbutane	C_6H_{14}	95
Heptane	C_7H_{16}	0
Octane	C_8H_{18}	—0
Iso-octane-2,2,4-trimethylpentane	C_8H_{18}	100
Nonane	C_9H_{20}	—28
Isodecane	$C_{10}H_{12}$	93
Isododecane	$C_{12}H_{26}$	100
Olefins:		
1-Butane	C_4H_8	80
2-Butene	C_4H_8	83
Isobutene	C_4H_8	87
Di-isobutene (polymer product)	C_8H_{16}	84
Tri-isobutene (polymer product)	$C_{12}H_{24}$	87
Di-isoamylene (polymer product)	$C_{10}H_{20}$	75
Cycloparaffins:		
Methylcyclopentane	C_6H_{12}	82
Cyclohexane	C_6H_{12}	77
Aromatics:		
Benzol	C_6H_6	97
Toluol	C_7H_8	+100

*Estimated.

The structure of the open-chain hydrocarbons, such as the paraffins, has much to do with the octane rating. This is well illustrated in the table with normal pentane, octane value 64 and 2-2-dimethylpropane, with 83 octane number.

Reference: Gustav Egloff, Motor Fuel From Catalytic Treatments of Cracked Gases, Western Petroleum Refiners Assn., Tulsa, October 1936. The Oil and Gas Journal, Oct. 15, 1936, p. 58.


MASTER
1244 SS
185,000 LBS.
SUPER SERVICE
1030 SS . . 66,000 LBS.
1240 SS . 140,000 LBS.
FULL FLEX
SS #3 . . 43,000 LBS.
SS #4 . 100,000 LBS.
COMPLETE DRILLING CHAIN SERVICE
There's a Baldwin chain for every drilling condition.
Baldwin chains are sold in all oil fields.
BALDWIN-DUCKWORTH CHAIN CORPORATION
Factories at SPRINGFIELD and WORCESTER, MASS.
Factory Representative: GEO. J. FIX, Dallas, Texas
BALDWIN
ask the Driller .. He Knows

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Estimating Oil Reserves

From time to time we have noted the term "Proven Reserves" in your Journal and have wondered exactly what it meant. Perhaps you will be able to clear up some of our difficulties: Does the term mean that amount of oil which it is estimated can be recovered from wells already drilled or does it mean the oil which can be recovered from existing fields, the rough limits of which are known? In other words, to what extent if any does additional drilling in proven fields increase "Proven Reserves?" If such is not the case, are additions to "Proven Reserves" made only by discovery of new pools or by geographical extension of existing pools?—F. W. E. F.

The term "proven reserves" has been applied to oil estimated to be in place in underground reservoirs proven by drilling. There have been several estimates of such reserves but with few exceptions it has been the purpose of the statisticians making such estimates to include in his estimate only that volume of oil that could be recovered and which had been proven to be in place by the drilling of a sufficient number of wells to establish the outline of the pool or field.

It has been necessary to make corrections of reserve estimates from time to time based upon later data. For instance a field is opened in 1935 and one or two wells drilled. Those wells "proved" up a relatively small acreage but other facts indicated that they were "openers" for a large field. In making the reserve estimate for 1936 the facts proven about the new field would be considered and the reserve carried in accordance with those facts.

During 1936 this new field is drilled up, that is sufficient work is done in and around it to definitely outline the size and shape of the underground structure or reservoir in which the gas and oil is found. From these new facts it is possible to revise the reserve figure for 1935 in the light of developments in 1936 and the oil reserve will be increased in keeping with the new facts.

It therefore follows that added reserves may be found by more extensive drilling in what is known as a "proven area" or by the finding of new pools and fields by drilling. Additional drilling is necessary in either event because it is a generally accepted fact that an oil or gas well does not open up more than a limited area around the bottom of the hole. In other words it is not usually safe to assume that gas or oil exists between two widely separated wells unless there is considerable other proven data to warrant such an assumption.

In the annual edition for 1937 The Oil and Gas Journal carried an estimate of reserves as of January 1 of that year. In this issue which is the annual edition there will be another estimate with corrections or additions to last year's figures and revisions bringing these statistics up to date. Many fields will show different reserves from those shown in 1937 because of additional development of the area during the past year.

One other fact must be remembered in considering reserves. They indicate the volume of recoverable oil estimated to be in place. This volume is based upon present prices. With oil at $1 the volume of oil that can be produced profitably is much less than the quantity that can be secured if oil is worth $2. The volume is not in direct ratio to the price but price will very definitely effect recovery and if the price should go high enough or oil become very scarce it is possible to mine the remaining oil in the reservoir and in this way entirely deplete the field. If the oil sand is not mined and the oil washed therefrom it is reasonable to assume that with modern methods as much as 65 per cent of the oil in place can be recovered if the price will justify its extraction.

The time required to extract all of this oil is another factor. It is now estimated there are about 12,500,000,000 bbls. of oil in reserves in this country with the demand in excess of 1,000,000,000 bbls. per year. This would indicate about 12 years' supply at the present rate of withdrawal but it is not possible to remove all of the now known oil in the 12-year period and it is estimated it will take from 20 to 25 years to recover all of it using present methods of production. It is therefore quite evident that at some period within the next 12 years the quantity of oil available for the refineries will be less than the needs. This is a major factor in the desire to find new fields for the new wells yield their oil at much higher rate than the older ones and this flush oil is quite essential if the volume of oil available from day to day is to be enough to satisfy daily still run demand. Another factor to be considered is improvements in refining methods tending to increase the yield of petroleum products from each barrel of oil.

Displacement of Mud Hog

I am anxious to know how I can calculate the number of gallons of fluid a mud hog discharges every complete round of strokes. The pump I have in mind has a 20-inch fluid stroke with 7¾-inch liners. I would appreciate receiving a formula applicable to any size pump.—R. L.

To calculate the number of gallons of fluid a pump will discharge for each revolution use the following formula:

Area of plunger in inches × length of stroke in inches × 2 and ÷ 231 cubic inches, the cubic measurement of 1 gallon.

For your particular problem 7¾ inches has an area of 47.173 square inches. The stroke is 20 inches, or the displacement for one stroke is 943.46 cubic inches. Divided by 231 equals 4.04 gallons. As a revolution consists of two strokes multiply 4.04 gallons by 2 and the result is 8.08 gallons for each round of strokes.

It is hardly probable that the pump will actually have 100 per cent efficiency and it is therefore general practice to assume an efficiency for the pump of 85 per cent. Therefore multiply 8.08 by 85 and the result is 6.87 gallons handled per stroke.

The 85 per cent may be too low and if the pump is in good working order the efficiency may be as high as 95 per cent or even higher but to be on the safe side the 85 per cent is suggested but in using the formula care should be taken to ascertain something of the pump's condition and adjust the efficiency accordingly.

Recovering Oil by Heating in Place

In your March 4, 1937, issue on the Readers Problems page you described a process used in Soviet Russia whereby gas heated to a temperature ranging from 600 to 650° C. was forced into a well at a pressure of 18 atmospheres and after the oil was ignited by this means air was pumped in by the repressuring compressor to maintain combustion. A temperature of 1,400 to 1,500° C. would be created and push oil through to the pumping wells.

The writer has some old wells in a dolomitic limestone with saturation 12 to 18 feet in thickness. The pools lying in the bottom of synclines, there being no water in this Beaver sand here in Wayne County, Kentucky. The pools have been small and very rich, and the pay is porous and in some instances cavernous. My wells are down to where they make 1 bbl. per day or less per well. Cores taken indicate a saturation of from 3,500 to 7,500 bbls. per acre still in the sand. Ordinary repressuring methods have met with erratic or no favorable results.

I would like to try this plan on a small pool covering about 20 acres on which I have six wells and desire to be informed if you know of any engineer qualified to direct such an experiment. There is from 5,000 to 10,000 feet of gas per day available on the lease. Any suggestions you can offer on this problem will be appreciated.—J. T. W.

It is not definitely known that the Russian engineers did carry on the experiment outlined in the article published in the March 4, 1937, issue of The Oil and Gas Journal for a sufficient length of time to prove anything conclusive.

Such experiments have been tried in this country but without any pronounced success. There are a number of theoretical reasons why this method of heating the oil in place should not succeed but on the other hand it is a well known fact that coal mines have burned for many years even though every effort has been made to seal the coal measure off from air.

One of the problems confronting anyone trying such an experiment as outlined in the Russian article is to overcome the fusion of the sand grains and other sediments when the heat of combustion becomes very high. The temperature reported—1,400 to 1,500° C. is equivalent to 2,552 to 2,732° F. Silicon melts at 2,588° F. and if the temperature reported is correct it is not hard to anticipate the fusion of the silica grains in the oil producing strata and the formation of a low grade glass quite impervious.

It is not difficult to lay out the surface plant and the superheaters by means of which the gas can be compressed and heated at the surface. It is also possible to estimate the volume of air needed to sustain combustion and in theory a lot of other details can be worked out on paper. But the catch in the whole thing is control of conditions underground and recovery of the volatilized hydrocarbons and conducting these hot gases to the surface where they could be precipitated as fluid and the valuable part of the oil recovered.

With the volume of oil still in place that you state your cores indicate justifies a complete study of the problem.

In closing I note you state the wells are producing from dolomitic limestone and then go on to say there is no water in the Beaver sand. I am therefore a bit confused as to whether you have lime or sand production but the problem of fusion would be the same in either event only the limestone would disintegrate at much lower temperatures than the silica would melt making the problem that much more difficult of solution.

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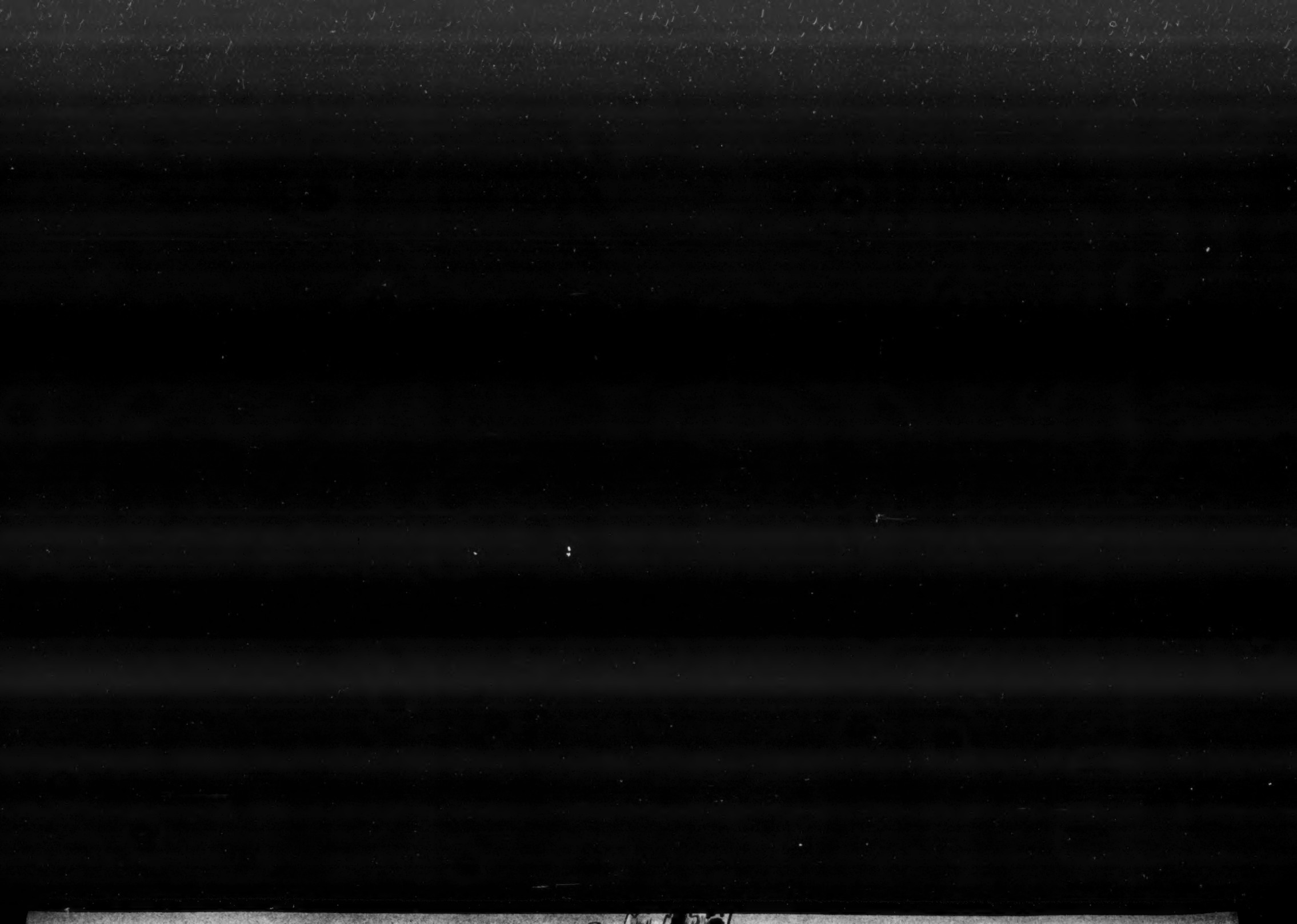


FIELD OPERATIONS

Summarizing the Week's Developments

The southeastern end of the harbor area of the Wilmington field in California was proven productive by a 450-bbl. well. Continental Oil Co. broke the California deep hole record when a wildcat in Kern County reached a depth of 12,640 feet. The formation is as yet unidentified. It is still a drilling well. The Ten Section field in Kern County was extended a mile easterly by a 600-bbl. well.

TEX-LA-ARK

North Louisiana allowable production in February was cut from 82,500 bbls. to 72,000 bbls. per day, Caddo Rodessa having been given a cut of 8,000 bbls. or 16 per cent. On the other hand Arkansas authorities gave the Rodessa field in that state a big increase in allowable, but it will make little difference, as the pipe lines will not run over 53 per cent of the allowable.

TEXAS

The Wasson-Denver field of Gaines and Yoakum counties in West Texas appears to have been proven over an area of 18,000 acres by recent scattered tests. A 1,744-bbl. well was completed in the Bennett pool in Yoakum County, the best well thus far in the pool. A wildcat in Loving County is showing oil in the Denver sand. The extension of the Benavides field in Duval County was indicated by the performance of a test 6,000 feet from Pettus sand production. A 12,000-foot test is being started in the Agua Dulce field, in Nueces County. The Luby field was extended 2,000 feet by a 150-bbl. well. The Friendswood field in Harris County, the principal discovery of 1937 in the Gulf Coast area, was extended last week northerly and easterly. The outposts are about 6,000 feet from the discovery well. The K.M.A. field in Wichita County was extended 2 miles northwesterly. On the western side of the field two wells started at 3,120 bbls. and 5,600 bbls. per day respectively. The old James pool in Young County was extended by a 900-bbl. and a 620-bbl. well.

OKLAHOMA

The third deep well to be completed in the Fox field, Carter County, and the second such completion in successive weeks, flowed 3,430 bbls. of 41-gravity oil after acidizing with 41,000 gallons. A well on the west side of the Cement pool, Caddo County, flowed 3,500 bbls. of oil with 15,500,000 feet of gas.

KANSAS

Wildcats opening new producing areas were completed in section 28-14-13, Russell County, and section 7-30-1e, Sumner County. Extensions were imminent in the Orth pool, Rice County, and the Beaver pool, Barton County. Simpson sand pay was found on the west side of the Graber pool in section 29-21-1w, McPherson County, other production being from Hunton, Chat and Misener formations.

NEW MEXICO

The Jal sand area, Lea County, was extended 1 mile south by a producer in section 26-25-37. A 1,200-bbl. well was completed in section 33-23-36, in the northwest extension area of Cooper pool, Lea County.

Completions in All Fields

(Week Ending January 22, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa., and W. Va.	80	16	6	102	384	217
Ohio	8	14	5	27	82	76
Indiana	0	0	0	0	6	17
Kentucky	3	5	5	13	43	16
Illinois	8	0	1	9	43	0
Michigan	9	0	4	13	47	58
Kansas	31	4	10	45	158	127
Oklahoma	22	3	5	30	125	164
Texas:						
North Central Texas	45	0	43	88	160	192
West Texas	46	0	2	48	184	145
Texas Panhandle	9	3	0	12	66	42
East Texas	47	0	2	49	188	170
East Central Texas	5	0	4	9	37	51
East Texas Border	1	0	0	1	12	38
Gulf Coast Texas	17	0	1	18	91	89
Southwest Texas	27	5	7	39	135	201
Total Texas	197	8	59	264	873	928
North Louisiana	5	3	1	9	49	26
Gulf Coast Louisiana	3	0	6	9	37	35
Total Louisiana	8	3	7	18	86	61
Arkansas	4	0	0	4	20	2
Montana	0	0	0	0	4	9
Wyoming	0	0	0	0	15	9
Colorado	0	0	0	0	0	2
New Mexico	11	0	1	12	48	58
Utah	0	0	0	0	0	0
California	19	0	8	27	94	92
Total United States	400	53	111	564	2,028	1,836
Total previous week	365	35	85	485		
Difference	35	18	26	79		

Outstanding Fields—Highlights

(Week Ending January 22, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Hastings	2	8	3	1,895	453	19,467
McCampbell	3	7	2	350	101	4,799
Saxet	2	11	4	466	604	41,610
Benavides	2	12	3	288	129	6,398
East Texas	68	86	47	2,458	24,411	492,898
Talco	0	10	2	474	607	27,950
K.M.A.	73	67	8	15,134	111	6,320
Ector County	9	75	9	9,797	137	27,100
Winkler County	11	19	10	7,483	1,559	41,300
OKLAHOMA						
Fitts-Jesse	7	17	3	1,189	954	75,900
Billings deep sand	1	3	1	1,008	61	7,800
KANSAS						
Barton County	5	40	4	489	284	11,760
Ellis County	4	24	4	6,896	273	10,145
Rice County	6	23	3	727	1,095	40,870
Russell County	8	46	7	5,589	989	32,655
NEW MEXICO						
Lea County	15	109	8	1,678	1,602	98,680
LA-ARK-TEX						
Rodessa, Ark.	4	5	2	1,045	61	8,550
Rodessa, La.	2	5	2	755	440	45,485
Rodessa, Tex.	0	12	1	305	388	19,620
Lisbon, La.	5	11	2	2,905	166	11,255
Shuler, Ark.	4	13	0	0	28	7,685
MICHIGAN						
Buckeye	9	41	6	1,707	341	24,338
ILLINOIS						
Central Illinois	32	98	8	1,943	258	24,924
CALIFORNIA						
Wilmington	14	34	9	2,197	361	62,150

Eastern Field Report

By STAFF CORRESPONDENT

New Production Chiefly from Two Wells in Southeast Ohio

PITTSBURGH, Pa., Jan. 24.—Nothing of unusual interest developed in the lower Eastern fields during the week. Completions numbered 26 of which 5 were dry, 14 gas wells and 7 producers with an initial daily production of 174 bbls. The new production was chiefly from two wells in Southeast Ohio.

SOUTHWEST PENNSYLVANIA

The deep test of Norwood P. Johnston and others on the James McBurney farm, south of Hickory in Mount Pleasant Township, Washington County, is definitely through the Oriskany sand which did not show oil or gas. The top of the sand was at 6,695 feet, a slight showing of water at 6,731 feet; the top of the B member at 6,769 feet; and the top of the Helderburg at 6,789 feet. It is drilling at 6,825 feet in this formation which will be slightly deepened before abandoning.

Only one operation was reported from Southwest Pennsylvania. In Greene County, Charles L. Mong and others drilled the second test on the Jacob Johns farm to 3,284 feet and was dry. The test on this farm was a fair producer.

In Wayne Township, Greene County, Manufacturers Light & Heat Co. is drilling at 3,235 feet on the Haddie J. Ross farm. Johnson and Eddy are cleaning out at 1,928 feet after cementing back in No. 2 E. W. Maple. In Jackson Township, Equitable Gas Co. is drilling at 3,060 feet deepening No. 1 Thorp with the top of the Fifty-Foot sand at 3,007 feet and 174,000 feet of gas at 3,038-40 feet. In Washington Township, this company is building a rig for No. 2 Sadie A. Connor lease and a second test.

In Gray Township, Greene County, Natural Gas Co. of West Virginia is drilling No. 2 D. G. Rush at 2,092 feet. In Springhill Township, Union Gasoline & Oil Corp. is deepening No. 1 T. M. Gallentine at 3,564 feet. Southwest Pennsylvania Gas Corp. is down 2,540 feet in No. 3 Thomas Smith. In Center Township, South Penn Oil Co. has rigged up to spud No. 12 Samuel Harvey. J. B. Orndoff is building the rig for No. 2 G. M. Scott.

In Greene Township, Greene County, Anna L. Garard has reached 2,665 feet deepening No. 1 M. Minor. In Richhill Township, Smith McCracken is deepening on the Asa Hughes farm and is drilling by lost tools. O. I. Dille is ready to spud the Jacob Livingood test.

Washington County

In Morris Township, Washington County, Duquesne Gas Co. has made a location on the J. E. Day farm. In South Franklin Township, Dunn Mar Oil & Gas Co. has a location for a joint well on the Baldwin and Gunn farms. South Penn Oil Co. is down 2,710 feet in No. 3 Piedmont Coal Co.

In Somerset Township, Victor D. Behm and others are drilling at 1,050 feet on the J. D. Amos test. In Peters Township, R. M. Duddin and others are drilling at 2,559 feet in No. 3 J. E. Johnston. Carnegie Natural Gas Co. reached 85 feet on the H. H. Schussler farm and shut down.

Deep Tests

The test of Potter Development Co., William E. Snee and others on the Summit Hotel lease on Chestnut Ridge in South Union Township, Fayette County, is drilling at 6,010 feet or close to the Tully lime. North of the National Highway in North Union Township, Wasson & Co. is rigged up ready to spud J. H. Sorg test, 900 feet north of the Jumonville road and the National Highway. North and east, Greensboro Gas Co. is hauling material on the J. R. Thompson farm. Foley and Fox are the contractors.

The test of South Penn Oil Co. and others on the Christian Z. Schove farm in Hampton Township, Allegheny County, is still shut down.

SOUTHEAST OHIO

The best producer was a test of Pure Oil Co. in Knox County, bottomed in the Clinton sand at 3,145 feet on the E. E. Blue farm in section 10, Jackson Township. It produced 104 bbls. the first day after shot, and as it was a time shot, the hole has not yet been cleaned of the gravel. In this section, Preston Oil Co. completed No. 3 Lloyd Bailey in the Clinton sand at 3,176 feet and it produced 49 bbls. the first day after shot.

In Jefferson County, C. S. Kelly and others drilled a test on the Ella Barnhouse and others farm, SW quarter of section 29, Saline Township, through the Berea grit to 1,270 feet. It was dry.

In Licking County, Stricker and Armbuster completed a test on the George Priest farm in section 7, Perry Township, at 725 feet, the Berea sand, gauging 50,000 feet. In section 10, Mary Ann Township, George H. Long completed a second test on the D. O. Tayman farm in the Berea sand at 790 feet and it will make a 2-bbl. pumper.

In Monroe County, Ulrich Oil & Gas Co. completed a test on the Thomas and Albert Ulrich farm in section 36, Summit Township, in the Berea grit at 1,788 feet. It was shot in the Injun sand at 1,422 feet and is making three-quarters barrel along with 30,000 feet of gas from the grit.

WEST VIRGINIA

Three small producers were completed in West Virginia. In Calhoun County, O. D. Jones completed the test on the Ira Parsons farm in Washington district at 2,280 feet with 10 bbls. of oil at 2,225-70 feet.

In Harrison County, George E. Harbert completed the second test on the Denton Varner farm in Ten Mile district at 3,150 feet, with about 5 bbls. at 3,110-3,115 feet.

In Richie County, Hill and Kuhn Oil Co. completed a second test on the F. B. Kerns farm in Grant district at 1,728 feet with a gas estimated at 29,000 feet and 3 bbls. of oil in the Maxton sand at 1,279 feet. R. C. Jackson and others drilled the Hartman heirs' test through the Berea sand to 2,389 feet and it was dry.

Gas Wells

In Boone County, Pure Oil Co. deepened No. 78 Federal Coal Co. in Sherman district to 3,146 feet, the Berea sand, and have a fair well gauging 1,108,000 feet. In Washington district, Owens-Illinois Glass Co. completed No. 5 W. S. Hatfield heirs in the Berea sand at 2,292 feet, gauging 149,000 feet.

In Braxton County, Pittsburgh & West Virginia Gas Co. completed the No. 7,632 Parkersburg Mill in Birch district at 1,563 feet, with 380,000 feet of gas at 1,548-59 feet. Same company completed No. 7,635 J. E. Hall at 2,571 feet, gauging 450,000 feet.

In Gilmer County, E. L. Bush completed No. 1 Jones and Young in Glenville district in the Maxton sand at 1,897 feet, good for 1,000,000 feet.

In Lincoln County, Empire State Gas Co. completed a test on the Talmage Bias farm in Sheridan district at 3,237 feet, with Berea and Brown shale, gauging 31,400 feet and 33,624 feet.

In Marion County, Carnegie Natural Gas Co. completed No. 2 Mary Caseman in Mannington district in the Big Injun sand at 2,355 feet, rated at 500,000 feet. In Monongalia County, this company deepened No. 555 Sarah J. White in Battelle district through the Bayard sand to 3,248 feet. It had only a small showing of gas and will be abandoned.

In Nicholas County, Hope Natural Gas Co. completed No. 7,777 C. & H. Corp. lease in Union district at 2,505 feet, gauging 850,000 feet.

In Putnam County, Henderson Development Co. completed a test on the W. E. Billups farm in Teays Valley district in the Berea sand at 2,033 feet, gauging 272,000 feet.

In Ritchie County, Lucas and Mahaney completed a test on the J. L. Robinson farm in Clay district at 2,096 feet, the Squaw sand. From the Big Injun and Keener sand, it gauges 200,000 feet a day. In Murphy district, Casidon Oil & Gas Co. completed No. 2 F. W. Hill in the Injun sand at 1,980 feet, gauging 50,000 feet. along with about one-quarter barrel of oil.

In Roane County, Hildreth and McGlothlin drilled a test on the J. F. Simmons farm in Smithfield district to 1,922 feet through the Injun sand and it was dry. It had a small showing of gas at 1,954 feet.

Oriskany Gas Field

Two wells were completed in the Oriskany gas pools in Kanawha County, West Virginia. In Elk district, Columbian Carbon Co. completed the test on the B. F. Jones farm at 4,995 feet, gauging 3,096,000 feet before shot. This company's test on the Dora Cavender and others lease was shot and the volume increased to 4,873,000 feet.

In Poca district, West Virginia Gas Corp.'s test on the D. F. Legg farm bottomed at 5,087 feet shows only an open flow of 634,000 feet.

Three new locations were made, two in Elk district. Columbian Carbon Co. made a location on the Maraget Rayhill farm in Elk district with an elevation of 838 feet on Whitemans Fork. On Five Mile Fork of Coopers Creek in Elk district, United Fuel Gas Co. made a location on the J. W. Cavender and others No. 4,788.

In Poca district, United Fuel Gas Co. made a location for No. 4,787 W. J. Glass and others on Grapevine Creek. Some tests reached the Corniferous lime in this district. This company topped that formation at 4,671 feet in No. 4,780 L. K. Johnson; 4,712 feet in No. 4,781 Virgil C. Tate; 4,722 feet in No. 4,783 Nina Chandler. Lima Gas Co. reached the Corniferous at 4,902 feet on the Hazel Shamblen and others lease, Poca district. West Virginia Gas Corp. topped that formation at 4,807 feet on the O. A. Vandine and others lease. Linden Drilling Co. struck the Corniferous at 4,974 feet on the John B. Kidd, heirs farm and Godfrey L. Cabot, Inc., on the Myrna and Homer Jarrett farm. South Penn Oil Co. is drilling in No. 4 T. H. Newhouse across the river from Sissonville and expected to be a large well. Joe Rubin has reached 4,040 feet on the Lawrence Smith heirs farm.

Deep Tests

In Clay County, test of the Pittsburgh & West Virginia Gas Co. on the Jesse Chapman farm in Otter district, is drilling at 5,856 feet. In Jackson County, Potter Development Co. is reaming out hole on the William T. Chancey farm, in Ripley district. In Ravenswood district, W. H. Petry is fishing on the D. O. Curry farm which reached the Oriskany.

In Steel district, Wood County, Belmont Quadrangle Co. is shut down at 4,000 feet on the D. C. White farm. In Harris district, Wood County, Potter Development Co. is rigging up on the W. O. Orem farm.

In Tucker district, Wirt County, Carnegie Natural Gas Co. shut down on the W. O. Caplinger farm below the Oriskany sand, a failure.

Other Operations

In Lincoln County, Kingsley-Guyan Oil Co. has made a location on the C. & O. Railroad lease in Harts Creek district, 379 feet north 48-27 west of the producer on the Guyan lease. It has an elevation of 675 feet and is in the newly discovered Lime oil pool.

In Doddridge County, Henderson Oil Co. has started drilling on the Alex Legett farm in Central dis-

(Continued on Page 217)

North Louisiana, Arkansas

By GEORGE WEBER

Louisiana Allowable Cut But Arkansas Output Is Increased

SHREVEPORT, La., Jan. 24.—State proration orders occupied the attention of all operators in the tri-state area this week, as new schedules were issued for Texas, Louisiana and Arkansas. The Texas Sunday shutdown will be felt keenly in Rodessa. A decrease in the Louisiana schedules, however, cuts the portion of the field in that state a comparable amount. The major change in proration occurs in Miller County, Arkansas, with the increase of allowable production to a top of 15,000 bbls. per day, as against 10,329 bbls.

In field operations, attention is directed to the Choudrant area of southeastern Lincoln Parish, in Louisiana, where Oakes & Easton No. 1 Griggs is testing for a possible field opener. Other important developments were completion of a third big producer in the Holloway sand of Cotton Valley in Webster Parish, testing in two outposts to the Lisbon field in Claiborne Parish, and a minor southwest extension to the Jefferson area in Marion County, East Border Texas.

Although the blanket Sunday shutdown order applying to all Texas wells for six Sundays, starting yesterday, makes no specific allowance for special cases in Rodessa, recognition of the flowing characteristics of certain marginal wells will be taken into consideration in applying the order. Those wells on gas lift which would require considerable swabbing to bring back to production after a day of shutting in, will be allowed to produce on Sundays, with the stipulation that allowable production be cut one-seventh during the week.

The same applies to wells producing gas for domestic consumption, natural gasoline plants and carbon black plants. The cut, however, makes the Texas side of Rodessa the most stringently prorated section of the field.

Estimated Daily Production

Estimated daily gross production, all companies, for week ending January 21, follows:

NORTH LOUISIANA

	Bbls.
Bellevue	650
Caddo light	3,750
Caddo heavy	2,545
Converse	620
Cotton Valley heavy	290
Cotton Valley light	*3,600
De Soto and Red River	1,480
Elm Grove	340
Haynesville	3,055
Holly	80
Homer	2,510
Lisbon	11,255
Pleasant Hill	115
Rodessa	45,485
Sarepta-Carterville	325
Sligo	320
Sugar Creek	335
Urania	2,875
Zwolle	740
Total	80,370

SOUTH ARKANSAS

Buckner	380
Champagnolle	1,250
El Dorado	1,850
Lisbon	275
Miller County	400
Nevada	680
Rodessa	8,550
Shuler	7,685
Smackover light	1,950
Smackover heavy	14,950
Stephens	545
Troy	1,275
Urbana	1,220
Total	41,010

Texas side of Rodessa field, 19,620 bbls. daily.
*3,115 bbls. is distillate.

Louisiana Decrease

Simultaneously with the Texas order, the State Department of Conservation in Louisiana announced schedules for February. In North Louisiana the total allowable was cut from 82,500 bbls. to 72,000 bbls. per day, a decrease of nearly 13 per cent compared with the cut of over 14 per cent in Texas.

For Rodessa, the top figure was cut from 50,000 bbls. to 42,000 bbls. per day, a 16 per cent cut, bringing the allowable production on that side of the state line to a figure more nearly comparable to the allowable in Texas.

Arkansas Increase

The move which throws Rodessa proration decidedly off balance is the increase in Miller County allowable production to a top of 15,000 bbls. compared with 10,329 bbls. The order, effective February 1, is not expected, however, to greatly increase production in the Arkansas section. Wells in that area have been making an average daily production of only 8,550 bbls. during the past week on the 10,329 allowable figure, and the increased allowable is not expected to add greatly to the present production.

The high gas-oil ratios of wells in that section will prevent them from producing in greatly increased volumes, due to the limit of 2,000 feet of gas to a barrel of oil with cutback provisions for wells producing in excess of that. The measure will bring an estimated added production of about 1,500 bbls. per day, however, bringing the average per well production to over 150 bbls. daily, greatly in excess of allowed production in either Louisiana or Texas.

RODESSA COMPLETIONS

Caddo Parish

Two producers were added to the Louisiana side of the Rodessa field during the week. Alice Sydney Oil Co. No. 1 Alexander, section 3-23-16, came in making 11 bbls. per hour on a quarter-inch choke, with tubing pressure of 250 pounds and casing pressure of 600 pounds; total depth, 6,004 feet.

Union Production Co. No. 5 Harris, section 10-23-16, made an initial production of 491 bbls. per day on a quarter-inch choke, with casing pressure of 1,325 pounds and tubing pressure of 100 pounds. Total depth is 5,959 feet.

Marion County

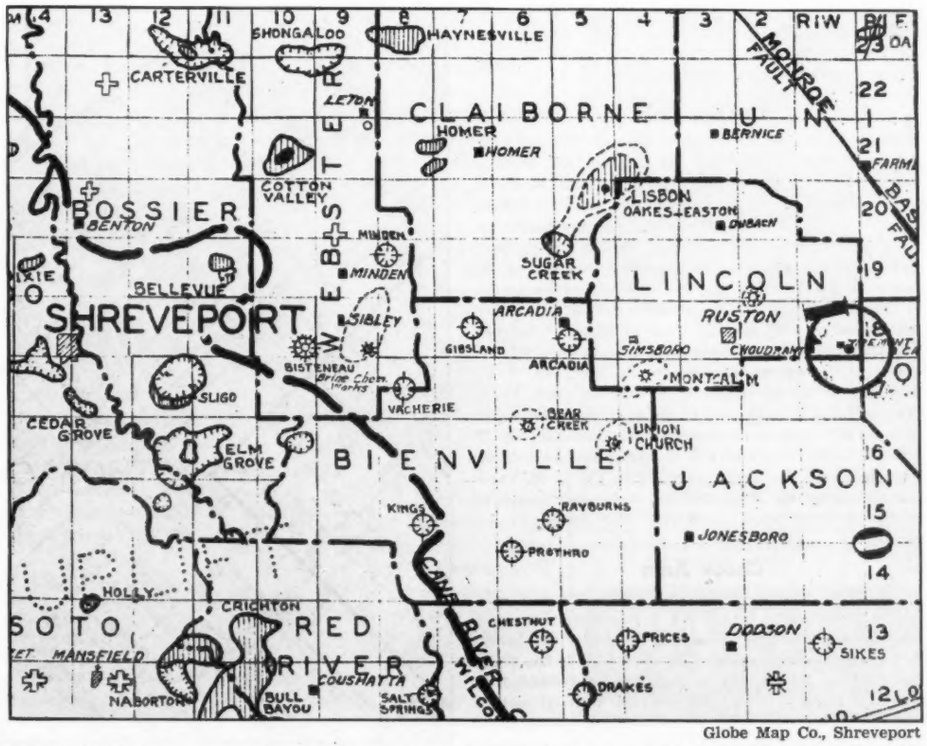
The only completion in the Texas section of Rodessa was brought in in the Jefferson area of Marion County. Fohs Oil Co. No. 1 Kemper, Bennington Survey, made 307 bbls. per day on a quarter-inch choke with tubing pressure of 300 pounds and casing pressure of 700 pounds at a total depth of 6,092 feet.

The same operators have an indicated southwest extension well in No. 1 Henderson, Ewing Survey, which logged saturation at 6,006-24 feet in the Gloyd zone, and will push the field's production one location southwest, when completed. Two completions were made in the Miller County, Arkansas, section. This area may see added development in view of the more liberal proration measures, but the Marion County area will continue to be the most important scene of development for the next several weeks.

Lisbon Developments

The Lisbon field of Claiborne and Lincoln parishes is the present scene of considerable interest, with two outpost wells testing. On the northeast edge of production, Magnolia Petroleum Co. No. 1 Fowler, C W half NW SE section 28-21-4, a diagonal offset to production, cored porous lime at 5,192-97 feet. The test is swabbing

(Continued on Page 208)



Globe Map Co., Shreveport

Interest is being attracted in southeast Lincoln Parish by the wildcat Oakes & Easton No. 1 Griggs, section 36-18-1w, which cored saturated lime at 5,931-40 feet and was testing for a possible field

Texas and Louisiana Gulf

By NEIL WILLIAMS

Two Friendswood Field Tests Look Like Major Extensions

HOUSTON, Tex., Jan. 24.—Two outpost tests assured major extensions to the Friendswood field, southern Harris County, the past week, confirming this structure as of major importance. Both extensions were made by Humble Oil & Refining Co. which controls practically all acreage and is now, after a slow start, carrying on an extensive development program. North of the discovery well about 6,000 feet, No. 1 E. H. Pierce, Lot 2, of the W. K. Smith Survey, topped the sand at 5,944 feet and cored sand to total depth of 6,050 feet. Casing was cemented slightly below the top of the sand section and the well is scheduled to be tested the first of the week. Approximately the same distance east of the discovery well in the T. Choate Survey, No. 2 Kiesling, topped the sand at 5,850 feet and logged the base of the sand at 6,045 feet. The hole was carried to total depth of 6,050 feet and casing was cemented for a production test.

In the recently opened Fairbanks field, northwestern part of the county, Amerada Petroleum Corp. and Stanolind Oil & Gas Co. are building road to a second location on the Maggie L. Peters lease in the W. K. Hamblen Survey, Abstract 317. The discovery well, No. 1 E. W. Mills, has been shut in for lack of storage after flowing 675 bbls. of 38 gravity through a quarter-inch choke on a 24-hour potential test. Production is through perforated casing at 6,838-52 feet.

Chambers County

Extensive development of the Seabreeze structure, Chambers County, was encouraged with recompletion of Sun Oil Co. No. 3 Acom as a large oiler. Originally completed through perforated casing at 8,415-40 feet, it was recompleted through perforated casing at 8,425-39 feet for an initial production of 668 bbls. per day through a quarter-inch choke. This is the first large producer on the structure. It is in the H.T.&B. Survey, section 103. Sun Oil Co. No. 1 J. T. White is a location in the H.T.&B. Survey No. 118.

Orange Field

Development of the recently opened Frio sand on the southwest flank of the old Orange field, Orange County, is gaining momentum as three more locations were announced. Ryan & Thompson are moving in material for No. 1 Norwood, about 2,400 feet northwest their No. 1 Chesson, the discovery well, in the William Dyson Survey, while J. M. Campbell has staked location for No. 1 Scales, several hundred feet southwest of the discovery in the same survey. This well is being drilled on a farmed-out lease of Kirby Petroleum Co. Offsetting the discovery to the south, Gulf Oil Corp. is rigging up for its second test, No. 1 F. Granger. In the immediate area, Gulf Oil Corp. No. 1 Orange National Bank, east of the discovery, is drilling below 4,900 feet while Union Production Co. No. 2 Lutcher Moore is attempting to straighten the hole at 3,400 feet. On the northeast flank in the S. M. Luce Survey, Glenn H. McCarthy No. 2 Brown Estate is coring in shale below 5,249 feet with no shows reported.

Cheek Area

In the Cheek area, Jefferson County, Glenn H. McCarthy is preparing to kill No. 1 Broussard after the salt water content continued to increase. Originally through perforated casing at 7,718-27 feet, it has been flowing from 7 to 8 bbls. of fluid per hour through a 9/64-inch choke of which 25 per cent was salt water, with the tubing pressure 1,875 pounds and casing pressure 2,800 pounds. The perforations will be squeezed off and the casing reperforated a few feet higher. The operator has made location for No. 2 Broussard, but actual drilling will be delayed until completion of the discovery well. It is 466 feet from the west line and 450 feet north of the south line of a 40-acre lease in the C. Hildebrandt Survey.

Waller County

Stanolind Oil & Gas Co. added another large gas well to the Katy structure, Waller County, with the completion of No. 1 Security Trust Co., about a mile west of the discovery in the H.&T.C. Survey No. 99. Perforations were made at 7,276-86 feet and the well flowed 3,330,000 feet of gas daily through a quarter-inch choke.

Matagorda County

Failure to get a successful drill stem test has delayed completion of Pierce Estate No. 1 fee, an interesting wildcat, 2 miles south of McCrosky, Matagorda County. Sand showing oil was cored in the sidetracked hole at 6,620-27 feet. A nine-minute drill stem test was made from 6,605-27 feet, but the packer slipped from 6,595 to 6,605 feet, and 46 stands of drilling mud with a slight gas blow was recovered. A second test was attempted and it too was a failure, and the hole is scheduled to be plugged back, sidetracked and redrilled to the same horizon. The original hole was carried to a total depth of 7,374 feet.

Interesting Wildcats

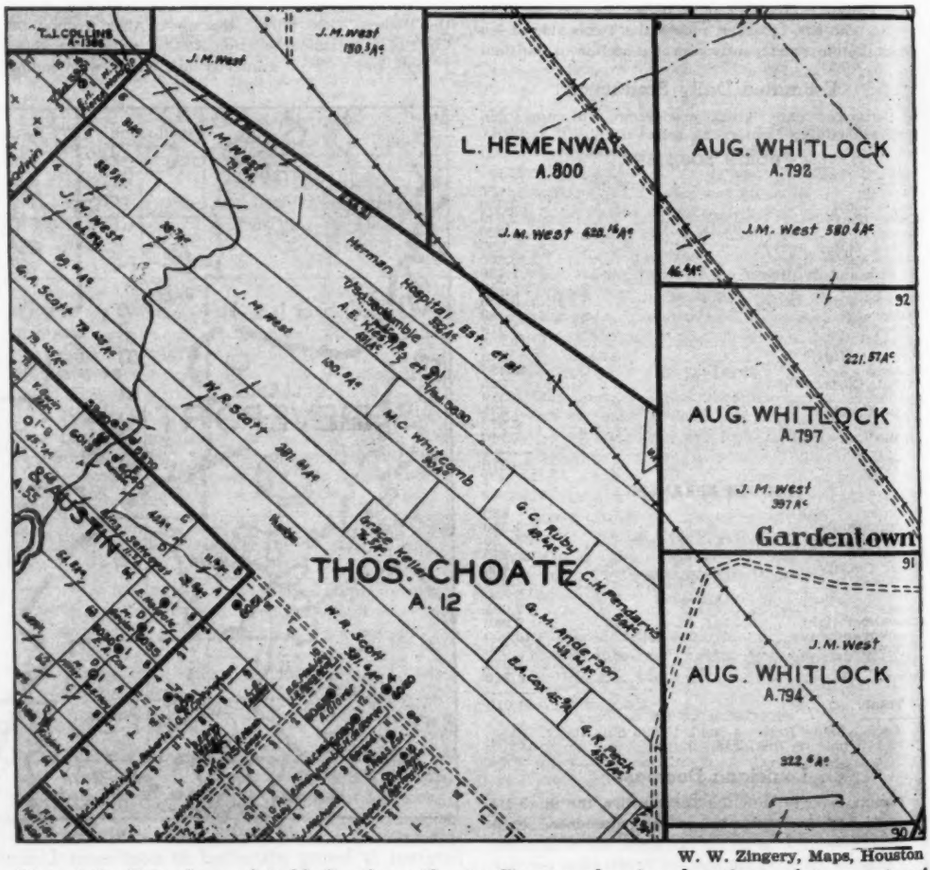
Two interesting wildcat locations were made in Chambers County. In the Kennedy area, A. A. Cameron and others are moving in material for No. 1 White in the Solomon Brill Survey, while in the Winnie area, Laverne Decker and others have staked No. 1 Broussard in section 30, H.&T.C. Survey.

Coastal Louisiana

In Coastal Louisiana, attention was centered again on the old Jennings field, Acadia Parish, where production has apparently been opened on the northwest flank of the dome by Superior Oil Co. No. 1 Jules Clement which has logged approximately 60 feet of oil sand. Several days will be required before a production test can be made, as the hole is being plugged back to sidetrack due to mechanical trouble caused by heaving shale. The hole was drilled to 7,374 feet and oil sand which showed 50 ohms resistivity and 140 millivolts porosity was logged from 7,028-88 feet. Discorbis was topped at 5,466-86 feet. The Leckelt, Heywood, Roberta and T. J. Clement sands which produce on the southwest flank were topped at 5,777, 5,910, 6,215 and 7,028 feet respectively. The well is about 2 miles from production in section 46-9s-2w. Stanolind Oil & Gas Co., Gulf Oil Corp. and several independent operators control most of the acreage.

Wildcatting in the district continues to increase with the announcement of three more locations. On the South Crowley Prospect, Acadia Parish, Humble Oil &

(Continued on Page 210)



W. W. Zingery, Maps, Houston

Plat of the Friendswood field, Southern Harris County, showing locations of two outpost tests which have assured major extensions to the field

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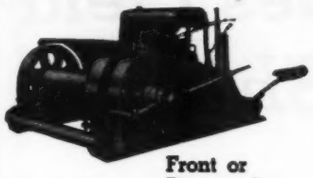

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Among Gulf Coast Drilling Contractors

Harry L. Edwards Drilling Co. is moving a rotary to the recently opened East Telferner field, Victoria County, where an east offset to the discovery will be drilled for the company and others. Contract was received from McAlester Fuel Co. for a well to be drilled in the Hardin field, Liberty County, while in the Dickinson field one outfit is on location for Coast Petroleum Co. One other operation is reported in the Lockridge field for McCurdy & Johnson on the State Riverbed lease.

George Echols has abandoned No. 1 Dunseth, a wildcat about 2 miles northwest of the Heyser field in Victoria County, and the rotary is being moved to San Patricio County where No. 1 Gertrude E. Guy, a wildcat near the town of Taft, will be drilled for E. W. Ogden. Two rigs are operating for himself and Sinclair Prairie Oil Co. in the Heyser field, while another is in the Jefferson field in Marion County for Fohs Oil Co.

Smith & McDannald are spudding two wells in the Dickinson field for Pure Oil Co. are preparing to spud Pan American Production Co. No. 1 Richer in the Bay City field, Matagorda County. One rig is being used on a workover job for themselves in the same field. In the Charenton field, for Pan American Production Co., No. 1 Eucer is nearing the 10,000-foot horizon. In the Long Lake field one completion was made for Tide Water Associated Oil Co., while at Jennings No. 3 Community being drilled for Shell Petroleum Corp. is drilling below 7,160 feet.

Cron & Gracey completed No. 1 Jurgens at the Tomball field for Shell Petroleum Corp. and received contract for another well. Drilling operations for Humble Oil & Refining Co. in the Flour Bluff field have been completed and the rig is being moved out. Other operations are reported for the Gibson field where another deep producer is being completed for Shell Petroleum Corp.; in the Lake Long field in Lafourche Parish where one well is drilling below the 10,000-foot horizon, and in the Dickinson field for Stanolind Oil & Gas Co.

A. A. Cameron is moving a rotary to Chambers County, where a wildcat will be drilled on the White Ranch in the Solomon Brill Survey for himsey and others.

Glenn H. McCarthy has spudded his second well in the Benavides field, Duval County. In the Cheek area, Jefferson County, his No. 1 Broussard is being killed to plug back and test after the well showed a large volume of salt water. On the northeast flank of the Orange field his No. 2 Brown is nearing the expected pay horizon, while in the Palacios field, Matagorda County, he is coring for the pay in Atlantic Refining Co. No. 3 Foley Land Co.

Nicklos Drilling Co. has abandoned No. 1 Faye, a wildcat in Jefferson Davis Parish, for Continental Oil Co. Additional development for the area is expected since a good showing was logged. In the Villa Platte field, Evangeline Parish, No. 1 Louisiana Land & Improvement Co. is drilling below 8,400 feet. Three operations are reported in the Valentine field for Pan American Production Co., while another rig is being used on a workover job for Continental Oil Co. in the Villa Platte field.

Rutherford Drilling Co. has spudded No. 1 Stewart in the West Saxet field, Nueces County, for his associated company, Rutherford Oil Corp., and is drilling below 11,700 feet on Skelly Oil Co. No. 14-B Cobb in the Van Vleck field, Matagorda County.

Superior Oil Co. of Oklahoma and L. A. Gillespie are expected to let contract in the near future for No. 1 Mahon & Buhler, a wildcat to be drilled near the town of Telferner in Victoria County. It is 1 mile east of Gulf Oil Corp. No. 1 Mahon & Buhler, which is reported to have logged several favorable showings.

O. W. Dyer continues testing No. 1 American Rio Grande, the discovery well of a field opened for Atlantic Refining Co. in Hidalgo County. The well is flowing 19 bbls. of distillate per day through a three-eighths inch choke and continues to make some wash water. Production is from perforated casing at 8,995-9,005 feet.

Ryan & Thompson Drilling Co. is starting its second test on the southwest flank of the old Orange field, Orange County, which during the past week received two new locations. The well will be drilled on the Norwood lease, about 2,500 feet northwest of No. 1 Chesson, which opened prolific Frio production the latter part of the past year. J. M. Campbell is scheduled to let contract for No. 1 Scales, southwest of the discovery in the William Dyson Survey, while Gulf Oil Corp. is moving in material for No. 1 F. Granger, a south offset. This makes a total of six new operations, three of which are already active.

Humble Oil Co.'s Gulf of Mexico test, No. 1 State, 8 miles east of High Island and off shore from southern Jefferson County, may soon be drilling. The United States engineers office in Galveston announces that the plans for this test are on file and that any protest against the proposed operations from the standpoint of navigation must be received not later than January 31. The decision rests entirely upon the proposal on navigation, not on conflicting claims to property rights affected by the work proposed.

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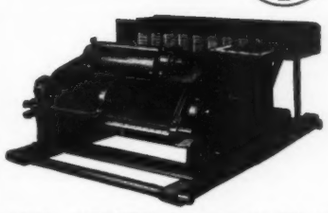

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Southwest Texas District

By F. L. SINGLETON

Extension to Benavides Field Is Indicated by Test Showing

CORPUS CHRISTI, Tex., Jan. 24.—Another major extension for the rapidly spreading Benavides field, Duval County, was indicated with the favorable showing of Hiawatha Oil & Gas Co. No. 6 Southland Life Insurance Co. Casing is being cemented for a production test after a 20-minute drill stem test at 5,511-13 feet showed 120 feet of oil and mud with 135 pounds of working pressure through a three-eighths inch choke. A previous test at 5,496-5,508 feet, tested 80 feet of oily mud and 10 feet of oil through the same size choke.

The well is about 6,000 feet from the most southerly Pettus sand production in Block 12, Agua Poquita Grant. Since all production from the Pettus sand (Cockfield) has been developed from a 5,300-foot horizon, it is believed completion of the well as a producer will open a horizon in the Yegua formation. Several tests drilled on the north and east sides have tested this formation, but all showed salt water.

The discovery of this field marked the beginning of a trend play which has resulted in several deep tests being drilled. Circle Oil Co. and others No. 1 Southland Life Insurance Co., 5 miles southwest of the town of Benavides, center of section 5, Santos Flores Grant, is coring below 5,175 feet, while Magnolia Petroleum Co. No. 1 A. Lopez, 10 miles south of San Diego and on the same trend in the M. Lopez Survey No. 28, is being watched closely as it drills in sandy lime below 5,986 feet. Another scheduled deep test was made the past week by Southwood Oil Co. on the Nolen lease, in the P. Cabellow Survey, about 7 miles northeast of Benavides.

In the Corpus Christi area, developments in the newly discovered West Saxet field, Nueces County, continue to hold interest of operators. L. A. Douglas, who opened the field with completion of No. 1 McKenzie, sold his holdings, consisting of approximately 475 acres to Phillips Petroleum Co. for an unannounced cash consideration. Leases involved include the 50-acre tract of the F. J. Smith lease, Charles McKenzie 90 acres, M. Clark 47.4-acre lease, L. A. Stewart 40-acre tract, F. B. Orr 40 acres, J. T. Roberts 25 acres, J. W. Daily 82.8-acre tract, and C. C. Hart 100 acres. This gives the company controlling interest in the field and the first location to be started by the company will be No. 1 M. B. Clark, 660 feet west of the discovery, section 417, B.S.&F. Survey. Renwar Oil Corp. has started drilling operations on No. 1 Charles McKenzie and No. 1 Morgan outpost wells southwest and east of the discovery, while Rutherford Oil Corp. has spudded No. 1 L. A. Stewart, about 3,500 feet to the southwest in the Dennan Survey.

Location for a 12,000-foot test is being started in the Agua Dulce field in the western part of the county by Union Producing Co. It is No. 1 Minne Brown in section 87, George Pauls Subdivision of the Driscoll ranch. The Luby field, southwest of Corpus Christi, was extended about 2,000 feet east with completion of Seaboard Oil Corp. No. 9 Luby which flowed 151.48 bbls. per day through a one-eighth inch choke with casing pressure 800 pounds and tubing pressure 1,330 pounds. Production is from perforated casing at 5,053-63½ feet. Locations were made by the company for No. 10 Luby, section 3, Block 2; No. 11 Luby, section 4, Block 2; No. 12 Luby, section 4, Block 2; No. 13 Luby in the same section and block number, and No. 14 Luby, 808 feet north of No. 13.

Production test on the J. K. Culton No. 4 Baldwin, the discovery well of a new sand in the Saxet Heights field, Nueces County, has been disappointing, although the well is producing enough oil to be classified as a commercial producer. Completed through perforated casing at 5,159-64 feet, it has been flowing from 250 to 375 bbls. of fluid per day of which 45 per cent is said to be salt water. Since the well did not show any salt water on a drill stem test, it is possible water may be coming from above or below the sand section. The well has been flowing through a five-sixteenths inch choke with 1,200 pounds on the casing and 825 pounds on the tubing. The same operator is preparing to deepen No. 1 Culton, the discovery well. In the Saxet field, A. R. Temple is moving in material for No. 1 William Singer, about 2,100 feet northwest of production in Survey 421.

In Victoria County, Superior Oil Co. of Oklahoma and L. A. Gillespie have made location for a wildcat on the Mahon and Buhler tract, near the town of Telferner in the San Antonio Valley Ditch Survey, Abstract 368. The well is being drilled on a farmed-out lease of Gulf Oil Corp. and the well is about 1 mile east of Gulf No. 1 Mahon and Buhler, a dry hole. Northeast of the Heyser field, George Echols has abandoned No. 1 Dunseth at a total depth of 6,509 feet. While information has been "tight" the only showing was logged at 5,938-45 feet where a 12-minute drill stem test showed 150 feet of 45-gravity oil and 250 feet of salt water. This may warrant additional wildcatting in the area.

Along the Jackson Trend, Rual Swiger No. 1-B Wood, which made a favorable showing several weeks ago and has been shut down, was rigged up with pumping equipment and is reported pumping 5½ bbls. of pipe line oil per hour. Production is from 5,914 feet. The well is in the J. Shearn Survey, Solo Creek field. In Goliad County, Hagan and Stewart Oil Co. are preparing to spud No. 1 T. C. Brannon, a wildcat one-half mile north of the Jim Wells County line in the A.B.&M. Survey No. 45.

Atlantic Refining Co. No. 1 American Rio Grande, the discovery well of a deep seated field in the Rio Grande Valley area, about 3½ miles southwest of Weslaco, is still testing and is not officially completed. On the last 24-hour gauge it flowed 19 bbls. of distillate through a three-eighths inch choke with tubing pressure 1,500 pounds and casing pressure 1,600 pounds.

Along the Balcones Fault line, operators were watching completion attempts on wildcats in Bexar and Caldwell counties where small production is expected. Four miles west of Macdona, in the J. H. Pickens Survey, R. W. Fair No. 1 San Antonio Subdivision was treated with acid and the operators are running tubing for a test. A showing of oil was logged in the Anacache lime at 1,150-90 feet. In Caldwell County, west of the Dale field, in the J. Gorman Survey, Ogden and Reed are making a production test at 2,315 feet. This area has been named the West Dale area.

COMPLETED WELLS IN SOUTHWEST TEXAS DISTRICT

Completed wells in the proven Southwest Texas fields, with total depth, and the initial 24-hour production of the producing wells follows:

Aransas County

McCampbell field: Atlantic Refining Co. No. 9-B Porterfield, 7,210 feet, plugged back 6,800 feet, 225 bbls., three-sixteenths inch choke. Buckingham Oil Co. No. 4 Porterfield, 7,228 feet, plugged back 7,136 feet, 125 bbls., three-sixteenths inch choke.

Caldwell County

Burdette Wells field: F. & W. Drilling Co. No. 1-C Rodenberg, 2,238 feet, 20 bbls. oil, 100 bbls. of water, pumping. Luling field: Millican and Norman No. 6 Tolbert, 2,103 feet, 300 bbls. Murchinson and Reed No. 4 Jennings, 2,076 feet, 500 bbls. Taylor Refining Co. No. 2 Brown, 41 bbls., pumping.

Calhoun County

Heyser field: Blanco Oil Co. and others No. 6 C. S. Dunwoody, 5,498 feet, perforated casing 5,489-95½ feet, 252 bbls., three-sixteenths inch choke. George Echols No. 7 W. H. Bennett, 5,746 feet, 198 bbls., nine-sixty-fourths inch choke. Humble Oil & Refining Co.-Plymouth Oil Co. No. 1 M. T. Vandenberg, 6,037 feet, plugged back 5,600 feet, perforated casing 5,586-88 feet, 137 bbls., seven-sixty-fourths inch choke. Humble Oil & Refining Co. No. 16 Welder, 5,480 feet, 16 bbls. per hour, three-sixteenths inch choke.

Duval County

Benavides field: Republic Production Co. No. 1 Buey, 4,789 feet, 96 bbls., 12 hours, quarter-inch choke. Humble Oil & Refining Co. No. 1 Rossi, 5,364 feet, 5 bbls., quarter-inch choke. Glenn H. McCarthy No. 1 Plocker, 5,369 feet, 39 bbls., 12 hours, three-sixteenths inch choke. Russ Petroleum Co. No. 14 Farias, 5,436 feet, abandoned. Labbe field: Magnolia Petroleum Co. No. 13 Labbe, 2,876 feet, completed as gas well. Seven Sisters field: Reynosa Oil Co. No. 1-A Garza, 2,660 feet, 8 bbls. per hour, quarter-inch choke. Sweden field: Hiawatha Oil & Gas Co. No. 4 Herberger, 5,905 feet, gas well.

Guadalupe County

Darst Creek field: D. A. Karamer No. 1-A Anderson, 2,467 feet, plugged back 2,440 feet, 6 bbls. oil, 22 bbls. of water, pumping. E. A. Tapp No. 1 Posey, 2,606½ feet, 103 bbls. of oil, 85 bbls. of water, pumping. Dunlap field: Detroit-Texas Development Co. No. 2 Carter, 2,362 feet, 5 bbls. of oil, 11 bbls. of water, pumping.

Jim Hogg County

Alworth field: French Oil Corp., 1,063 feet, completed as gas well.

Jim Wells County

Premont field: Miss-Texas Oil Co. No. 1 Randolph, 2,339 feet, 46 bbls., 50 per cent water, jetting with gas.

McMullen County

Rhodes field: Argo Royalty Co. No. 1-B Edrington, 1,763 feet, gas well. Jacob field: Chiquita Oil Co. No. 5 Lark, 958 feet, 6 bbls., pumping.

Medina County

Calliham field: Marion Production Co. No. 1 Lark, 1,056 feet, 5 bbls., pumping.

Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 2 Turcotte, 6,654 feet, 160 bbls., one-eighth inch choke. Saxet field: Houston Oil Co. No. 34 Morgan, 4,861 feet, 67 bbls., six hours, quarter-inch choke. Kepley Production Co. No. 10 Donnegan, 4,584 feet, perforated casing 4,547-52 feet, 125 bbls., quarter-inch choke. Daniel McGahey No. 2 Cox-Cryer, 4,170 feet, 159 bbls., three-sixteenths inch choke. Richardson Petroleum Co. No. 14 Queros, 6,754 feet, 115 bbls., three-sixteenths inch choke.

Refugio County

Nordan-Morris No. 3 Oconnor, 5,996 feet, perforated casing 5,889-99 feet, 584 bbls., quarter-inch choke.

Victoria County

Keeran field: Union Oil Co. No. 8 Keeran estate, 6,512 feet, perforated casing 5,490-93 feet, gas well.

Webb County

Oilton field: Magnolia Petroleum Co. No. 3 Sprague, 3,146 feet, abandoned. J. R. B. Moore No. 3 Martin, 1,899½ feet, 177 bbls., pumping.

Kansas Developments

By
DAL DALRYMPLE

Uncover Deep Pay at Graber; Beaver, Orth Areas Extended

Extension of several pools and discovery of deep pay in the Graber pool, McPherson County, featured field operations in Kansas the past week.

Continental Oil Co. and others No. 6 Huxman, NE NW NW section 29-21-1w, on the west side of the Graber pool, found pay in Wilcox, or Simpson, sand at 3,398 feet and cored to 3,406 feet, total depth, recovering saturated cores. Seven-inch casing was set at 3,389 feet and operators were preparing to bail down after standardizing. If completed as a producer, this will be the first Wilcox producer in the field. The majority of Graber wells produce from Hunton lime, with some production from Chat and Misener formations.

Extension of the Beaver pool, Barton County, one-half mile west was indicated at Paul Martin No. 1 Kultgen, SE SE NE section 17-16-12w, which was to be given potential test after acidizing at 3,342 feet, total depth. It was estimated good for 1,000 bbls. of oil daily from Lansing and Gorham pay zones.

The Orth pool, Rice County, was due to be extended one-half mile north at W. E. Witt and others No. 1 Rieff, section 22-18-10w. It had about 1,000 feet of oil in the hole from 1 foot in Arbuckle lime topped at 3,271 feet. It had not been tested.

Merton Marshall and others No. 11 Michel, 3 miles southeast of Walnut, Crawford County, pumped 40 bbls. of oil in eight hours after a shot and was completed in Bartlesville sand at 355-406 feet, total depth. It was reported to be the largest producer completed in that southeastern Kansas stripper area since 1917.

Thayer Drilling Co. and James A. Brouk No. 1 Soderstorm, SE SE NW section 21-17-13w, Hoisington area, Barton County, was running tubing and rods preparatory to acidizing and completing as a Lansing lime producer, total depth 3,233 feet.

Wildcat Completions

R. H. Shields and others No. 1 Rogg, NW NW SW section 28-14-13w, wildcat northeast of the Hall pool, Russell County, found Kansas City lime at 2,874 feet, was bottomed at 2,922 feet, acidized, pumped 285 bbls. of oil in four hours and made potential of 1,635 bbls.

W. M. McKnabb No. 1 Blair, SW cor. section 7-30-1e, which opened the Zyba pool in northern Sumner County, was completed for potential of 386 bbls. of oil after a shot in Wilcox sand topped at 3,860 feet, total depth 3,869 feet.

Boyle & Grossman No. 1 Diener, SE SE NE section 35-19-1w, McPherson County wildcat, was dry and abandoned in Arbuckle lime at 3,492-95 feet, total depth.

Elmer Ash and others No. 1 Frees, NW cor. section 34-16-11w, wildcat in Barton County, had Arbuckle lime at 3,425 feet, hole full of water at 3,444 feet, total depth, and was dry and abandoned.

C. L. Carlock No. 1 Heyle, SE SE NW section 14-13-16w, Ellis County wildcat, had Arbuckle lime at 3,404 feet, water intruded and it was abandoned at 3,440 feet, total depth.

Ohio Oil Co. No. 1 Howell, C SW SW section 21-29-15w, Pratt County wildcat, found Arbuckle lime at 4,900 feet and was dry and abandoned at 4,929 feet, total depth.

Helmerich & Payne No. 1 Winter, NW NW SW section 16-32-10w, wildcat in Barber County, was dry and abandoned in Arbuckle lime at 5,000-5,125 feet, total depth.

Barton County

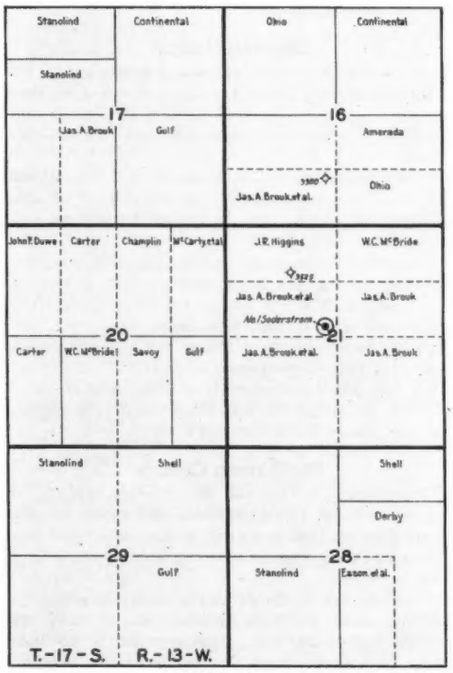
Palmer Oil Corp. No. 1 Polzin B, NE NE SW section 4-16-12w, Barton County, had Arbuckle lime at 3,336 feet, total depth 3,338 feet, was acidized, pumped 80 bbls. of oil in one hour and made potential of 1,315 bbls. of oil. Other Barton County completions of the past week were as follows:

Polk & Fortson No. 1 Jarus, SW SW NE section 16-16-12w, Gorham sand 3,338 feet, total depth 3,343 feet, pumped 99 bbls. of oil in four hours, potential, 402 bbls.

Phillips Petroleum Co. No. 1 Krautwurst, SE SW SW section 11-17-11w, Arbuckle lime 3,379 feet, total depth 3,616 feet, temporarily abandoned.

Cities Service Oil Co. No. 2 Bitter B, C W half W half SE section 8-16-13w, Arbuckle lime 3,382 feet, total depth 3,389 feet, pumped 82 bbls. of oil in two hours, acidized, potential 1,007 bbls.

T. C. Johnson No. 4 Bitter, SE SE NW section 8-16-13w, Arbuckle lime 3,382 feet, total depth 3,389 feet, acidized, pumped 228 bbls. of oil in four hours, potential 1,024 bbls.



Mid-Continent Map Co., Wichita

Thayer & Brouk No. 1 Soderstrom, section 21-17-13w, pool opener in Barton County, was preparing to acidize and complete

Other recent Barton County completions: Cities Service Oil Co. No. 1 Bitter D, SW SW NE section 8-16-13w, total depth 3,450 feet, dry and abandoned.

Same company's No. 1 Bitter C, NW NW NE section 18-16-13w, Arbuckle lime 3,382 feet, total depth 3,389 feet, potential 518 bbls. of oil.

Texas Co. No. 2 Disque, NE SE SW section 3-17-11w, Arbuckle lime 3,310 feet, total depth 3,339 feet, potential 1,865 bbls. of oil.

Stanolind Oil & Gas Co. No. 8 William Panning, SE NE SE section 2-20-11w, Arbuckle lime 3,274 feet, total depth 3,283 feet, potential 1,890 bbls. of oil.

Same company's No. 8 Kowalsky, SE SE NE section 11-20-11w, Arbuckle lime 3,282 feet, total depth 3,285 feet, potential 2,043 bbls. of oil.

Gulf Oil Corp. No. 1 Spanier, NW cor. section 12-20-11w, Arbuckle lime 3,270 feet, total depth 3,278 feet, potential 1,830 bbls. of oil.

Same company's No. 6 Sessler, SW NW SW section 24-20-11w, Arbuckle lime 3,249 feet, total depth 3,261 feet, potential 1,617 bbls. of oil.

Indian Territory Illuminating Oil Co. No. 5 Sessler, NW SW SW section 24-20-11w, Arbuckle lime 3,258 feet, total depth 3,270 feet, potential 1,722 bbls. of oil.

New work in Barton County: T. C. Johnson No. 5 Bitter, C W half W half SW section 8-16-13w, rig; Armer & Vernon No. 5 Ainsworth, SW NE SE section 33-16-13w, rig; Sinclair Prairie Oil Co. No. 1 Grosshardt, NE NE SW section 10-17-11w, total depth 3,329 feet; Phillips Petroleum Co. No. 2 Krautwurst, NE NW SW section 11-17-11w, moving in tools; Transwestern Oil Co. No. 2 fee, SE cor. section 12-17-11w, location.

Russell County

One of the large completions of the week in Russell County was Phillips Petroleum Co. No. 2 Amelia, NW NW SW section 6-14-14w, Gorham district. It found Topeka lime at 2,768 feet, was bottomed at 2,771 feet, pumped 287 bbls. of oil in four hours and made potential of 1,711 bbls. Other completions of the week:

Phil-Han Oil Co. and Hinkle No. 1 Reinhardt, SE SE SW section 19-14-14w, had Arbuckle lime pay at 3,242-43 feet, total depth, and made potential of 933 bbls. of oil.

Central Petroleum Co. No. 9 Foster B, SW NW NE section 3-14-15w, Gorham sand 3,308-18 feet, total depth, potential 1,449 bbls. of oil.

Transwestern Oil Co. No. 8 Helen Polcyn, SW SE SE section 10-14-15w, Kansas City lime 3,045 feet, sand 3,260 feet, total depth, perforated casing 3,062-79 feet, acidized, potential 616 bbls. of oil.

Brunson and others No. 1 Gaynor, SE SE NW section 19-13-14w, Arbuckle lime 3,183 feet, total depth 3,197 feet, acidized, potential 1,587 bbls. of oil.

Transwestern Oil Co. No. 1 Cram, NW SW SE section 11-14-15w, Gorham sand 3,253-58 feet, total depth, potential 432 bbls. of oil.

Cities Service Oil Co. No. 1 Little B, NW NW SE section 14-15-14w, Arbuckle lime 3,327 feet, total depth 3,358 feet, dry and abandoned.

Russell County completions of the preceding week: Texon Oil Co. No. 4 Letsch, NW SW SW section 26-14-13w, Kansas City lime 2,823 feet, total depth 2,930 feet, plugged back to 2,875 feet, potential 1,897 bbls. of oil.

Smoky Hill Oil Corp. No. 7 Miller, NE SW NW section 31-14-13w, Gorham sand 3,140 feet, total depth 3,144 feet, potential 1,409 bbls. of oil.

Cities Service Oil Co. No. 1 Krug F, NW NW NE section 13-15-14w, Kansas City lime 3,090 feet, total depth 3,118 feet, potential 1,912 bbls. of oil.

Same company's No. 1 Podszus, NE NE SW section 25-15-14w, Arbuckle lime 3,304 feet, total depth 3,310 feet, potential 1,830 bbls. of oil.

The following new tests in Russell County were reported: Smith & Unruh No. 1 Stellow, NW cor. section 32-11-14w, rig; Liggett No. 2 Durham, NW SE NE section 20-11-15w, rig; Stanolind Oil & Gas Co. No. 33 Bronson, SE SW SE section 20-11-15w, plugged back from 3,323 feet to 3,188 feet; Hiers No. 1 Brandenburg, NW NW SW section 20-14-14w, rig; Aylward No. 1 Hall, NW NW SW section 22-14-14w, rig; Stanolind Oil & Gas Co. No. 24 Dortland, NE SW SW section 5-14-15w, rig; Transwestern Oil Co. No. 12 Polcyn, SW NW SE section 10-14-15w, moving in materials; Wolf Creek Oil Co. No. 4 Mills, SE SE NW section 10-14-15w, cellar; Carter Oil Co. No. 2 Detrich, SE SE SW SW section 8-15-13w, drilling at 3,180 feet; Cities

Service Oil Co. No. 2 Tittle C, SE SE NW NW section 13-15-14w, rigging up rotary.

Estimated Daily Production

Estimated daily production of Kansas for the week ending January 22 and for the preceding week was as follows:

	Barrels	
	Jan. 22	Jan. 15
Oxford City	1,425	1,200
Burrton	12,200	10,100
Ritz-Canton	5,300	5,100
Graber	3,000	2,675
Hollow-Nikkel	2,475	2,300
Lorado	1,600	1,375
Voshell	2,325	2,075
Wellington	2,100	2,750
Ellsworth County:		
Lorraine	3,150	2,775
Other pools	1,310	1,195
Rice-Barton counties:		
Bloomer	3,575	3,150
Chase	7,500	5,200
Geneseo	2,850	2,675
Raymond	1,150	1,100
Silica—Silica West	18,250	16,100
Silica—South	3,000	3,400
Keesling	1,000	1,050
Hauschild	1,250	1,175
Miscellaneous Rice	5,870	8,045
Miscellaneous Barton	8,185	5,525
Russell County:		
Fairport	2,375	1,725
Gorham	1,550	1,780
Russell	1,760	2,115
Sullivan	7,440	6,785
North Trapp	11,055	12,185
Miscellaneous Russell	8,475	8,695
Sedgwick County:		
Valley Center	1,000	1,020
Miscellaneous	2,800	2,270
Ellis County:		
Bemis	6,925	6,550
Miscellaneous	3,220	2,900
Kingman County	595	500
Stafford County	3,725	3,470
Greenwood County	9,675	9,700
Butler County	16,820	16,710
Other fields	25,145	24,830
Total Kansas	190,075	180,200

Ellis County

The largest of four producers completed the past week in Ellis County was Cities Service Oil Co. No. 4 Hall B, NE NW NW section 26-11-17w, Bemis district. It had Arbuckle lime at 3,412 feet, was bottomed at 3,423 feet and made potential of 2,528 bbls. of oil. Other Ellis completions:

Same operator's No. 14 Bemis, SW NW SE section 21-11-17w, Arbuckle lime 3,371 feet, total depth 3,382 feet, potential 2,093 bbls. of oil.

Republic Natural Gas Co. No. 1 Bemis, SE SW SW section 21-11-17w, Arbuckle lime 3,468 feet, total depth 3,473 feet, pumped 275 bbls. of oil in four hours, potential 1,520 bbls.

Shell Petroleum Corp. No. 2 Rumsey, SW NW NW section 23-11-17w, Arbuckle lime 3,393 feet, total depth 3,418 feet, potential 2,000 bbls. of oil.

Other recent Ellis County completions: Lario Oil & Gas Co. No. 5 Romine, SW NW SW section 18-11-16w, Arbuckle lime 3,387 feet, total depth 3,391 feet, potential 2,677 bbls. of oil.

Phillips Petroleum Co. No. 4 Bemis, SW SE NE section 21-11-17w, Arbuckle lime 3,350-60 feet, total depth, potential 3,097 bbls. of oil.

Magnolia Petroleum Co. No. 8 Johansen, NE SE NE section 22-11-17w, Arbuckle lime 3,372 feet, total depth 3,374 feet, potential 2,565 bbls. of oil.

Kerlyn Oil Co. No. 1 Rumsey, SW cor. section 23-11-17w, Arbuckle lime 3,385 feet, total depth 3,395 feet, potential 2,721 bbls. of oil.

Champlin Refining Co. No. 1 Hadley, NW SE SW section 29-11-17w, Arbuckle lime 3,527 feet, total depth 3,555 feet, potential 1,356 bbls. of oil.

Same company's No. 3 Meier A, SW NE SW section 36-11-18w, dry and abandoned at 3,697 feet, total depth.

First reports of new activity in Ellis County: Kerlyn Oil Co. No. 3 Rumsey, SW SE SW section 23-11-17w, location; Shell Petroleum Corp. No. 3 Rumsey, NW SW NW section 23-11-17w, rig; Jones-Shelbourne and others No. 1 Smith, SW NW SW section 12-12-16w, spudded.

Rice County

Continental Oil Co. and others No. 1 Connery A, NE cor. section 1-19-8w, Geneseo district, Rice County, topped Arbuckle lime at 3,250 feet, was bottomed at 3,258 feet, pumped 238 bbls. of oil in seven hours, was acidized and made potential of 962 bbls. of oil, with 153 bbls. of water.

Mid-Plains Petroleum Corp. No. 3 Snyder, NW SW SE section 9-21-7w, had Conglomerate at 3,360 feet, total depth 3,378 feet, was shot and made potential of 289 bbls. of oil.

Bishop Oil Co. No. 1 Reese, NE NE NW section 22-19-9w, had Kansas City lime pay at 2,925-31 feet, total depth, pumped and flowed 200 bbls. of oil in 7 hours, acidized and made potential of 1,283 bbls. of oil, with 10,000,000 feet of gas.

Transwestern Oil Co. and others No. 6 Moran A, NW cor. section 4-18-10w, had a fishing job and was abandoned at 2,702 feet, total depth.

Other recent Rice County completions: Shell Petroleum Corp. No. 1 Zajic, NW NW NE section 13-18-8w, Arbuckle lime 3,161 feet, total depth 3,242 feet, potential 2,331 bbls. of oil.

Continental Oil Co. and others No. 2 Ainsworth, SW SE SE section 24-18-8w, completed as salt water disposal well at 3,940 feet, total depth.

Skelly Oil Co. No. 1 Volkland B, NW SW NW section 5-18-10w, an old well reworked, made potential of 4,005 bbls. of oil from Kansas City pay at 3,006 feet, total depth.

Mid-Plains Oil Co. No. 3 Hauschild, NE SW SE section 10-21-7w, Conglomerate 3,369 feet, total depth 3,379 feet, potential 631 bbls. of oil.

New work in Rice County: Continental Oil Co. No. 1 Ainsworth A, SW SW NW section 30-18-7w, rigging up standard tools; Cities Service Oil Co. No. 1 Zajic, NW NE SE section 11-18-8w, location; Continental Oil Co. No. 1 Williams, NE NE NW section 13-18-8w, rigging up rotary; same company's No. 2 Connery, NE SE SE section 36-18-8w, rigging up rotary; E. B. Holland No. 1 Malone, NE SW NE section 19-20-9w, rigging up standard tools; Mid-Plains Oil Co. No. 4 Hauschild, SE NE NE section 15-21-7w, drilling below 2,530 feet; Sunflower Co. No. 4 Strange, NW SE NW section 16-21-7w, spudded.

Stafford County

Stanolind Oil & Gas Co. No. 4 Spangenberg, SW NW NW section 29-22-11w, Hudson area, Stafford County, found Arbuckle lime at 3,578 feet, total depth 3,623 feet, acidized and made potential of 1,085 bbls. of oil.

Same operator's No. 15 Komarek, SE SW NE section 30-22-11w, made potential of 686 bbls. of oil after acidizing Arbuckle lime topped at 3,579 feet, total depth 3,596 feet.

Two wells were completed the preceding week in Stafford County, one being Stanolind Oil & Gas Co. No. 1 Siefkes, NW NW SE section 34-21-12w, dry and abandoned at 3,710 feet, total depth.

Same company's No. 1 Volker, SW NW NE section 23-24-11w, had Simpson sand at 3,793 feet, total depth 3,802 feet and made potential of 1,709 bbls. of oil.

Lario Oil & Gas Co. and others No. 1 McNaughton, SW cor. section 22-24-13w, was a rig.

McPherson County

Rose Spring Drilling Co. No. 1 Carlson, SE SE NW section 24-19-3w, Chindberg area, McPherson County, found Chat at 2,990 feet, was bottomed at 3,009 feet, acidized and made potential of 382 bbls. of oil, with 20 bbls. of water.

Two McPherson County wells were completed the previous week. Pryor & Lockhart No. 1 Bixby, NE NE SW section 24-19-3w, made potential of 579 bbls. of oil from Chat topped at 2,995 feet, after plugging back from 3,017 feet, total depth.

Continental Oil Co. No. 1 Jones A, SE cor. section 30-21-1w, Graber pool, had Hunton lime at 3,278 feet, total depth 3,295 feet, and made potential of 120 bbls. of oil.

New work in McPherson County: McPherson Oil & Gas Co. No. K-5 Chindberg, SE NW NW section 32-18-2w, rigging up standard tools; E. B. Shawver No. 3 Lively, SE NW NW section 21-19-1w, total depth 3,402 feet; Continental Oil Co. No. 1 Meyer, NE NE SE section 19-21-1w, cellar; Ohio Oil Co. No. 15 Decker, C S half NW NW section 20-21-1w, rigging up standard tools.

Reno County

Salt City Gas Co. No. 1 Haines, C NW SE section 33-24-5w, Reno County, had Chat at 3,408 feet, total depth 3,549 feet, plugged back to 3,455 feet, acidized and produced 2,500,000 feet of gas.

Sumner County

Stelbar Oil Corp. No. 10 Erker, C E half E half SW section 33-31-1w, Wellington pool, Sumner County, was acidized and made potential of 1,066 bbls. of oil from Chat topped at 3,644 feet, total depth 3,684 feet.

Another recent Sumner completion was Stelbar Oil Corp. No. 3 Barlow B, C W half W half SE section 33-31-1w. It topped Chat at 3,644 feet, total depth 3,681 feet, and made potential of 3,074 bbls. of oil.

Pratt County

Skelly Oil Co. and associates No. 1 Lunt, C NW section 18-28-11w, Gilchrist district, Pratt County, was acidized and produced 68,100,000 feet of gas from Viola lime at 4,278 feet, total depth 4,338 feet.

Barber County

J. A. Davis No. 1 Williams, SE SE NW section 30-31-11w, Whelan area, Barber County, topped Conglomerate at 4,279 feet, pay 4,294-98 feet, total depth, flowed 137 bbls. of oil in four hours and made potential of 429 bbls.

A recent completion was Barbara Oil Co. No. 1 McKee, C SE SE section 21-33-13w, Medicine Lodge area. It topped Chat at 4,520 feet, total depth 4,635 feet and produced 21,000,000 feet of gas.

Barbara Oil Co. No. 2 Root, SW section 15-33-13w, was a location.

Rooks County

Phillips Petroleum Co. No. 1 Westhusin, SE SE NE section 11-9-17w, Westhusin pool, Rooks County, found Kansas City lime at 3,155 feet, total depth 3,303 feet, pumped 46 bbls. of oil in five hours and was completed as a 15-bbl. pumper.

Stevens County

Two gas wells were completed in the Hugoton field, Stevens County. Panhandle Eastern Pipe Line Co. No. 1 well, C E half E half NW section 21-31-38w, had gas pay at 2,412 feet, total depth 2,655 feet and produced 11,200,000 feet of gas.

Benedum-Trees Oil Co. No. 1 Morris, C NW section 33-34-38w, had pay at 2,810 feet, total depth 2,842 feet, and produced 3,500,000 feet of gas.

Butler County

National Refining Co. No. 4 McCullough, SW NW SE section 1-28-6, McCullough pool, Butler County, had Wilcox sand at 3,185 feet, total depth 3,197 feet, and made potential of 270 bbls. of oil, with 5 bbls. of water.

Coronado Oil Co. No. 1 Dunne, NE NE SE section 22-26-7, topped Mississippi lime at 2,717 feet, total depth 2,762 feet, acidized and pumped 12 bbls. of oil and 25 bbls. of water daily.

Carey and others No. 1 Maxwell, NE SW SW section 31-24-4, was dry and abandoned at 950 feet, total depth.

Clark Schwartz No. 1 Moore, SW SW NW section 32-24-4, was dry and abandoned at 1,000 feet, total depth.

Cowley County

E. B. Shawver No. 3 Brewer, SW SW SE section 5-34-3e, Cowley County, had Bartlesville sand at 3,292 feet, Chat 3,316-18 feet, total depth, and made potential of 278 bbls. of oil from sand.

Two Cowley County wells were completed the preceding week. Phillips Petroleum Co. No. 1 Starkey, NW NE SE section 16-30-4, had Bartlesville sand at 2,780 feet, total depth 2,791 feet, and made potential of 165 bbls. of oil.

Murphy Oil Co. No. 7-A Denton, C W half SW SW SW section 3-31-8, was bottomed at 3,134 feet, plugged back to Mississippi lime at 2,693-2,700 feet, and pumped 13 bbls. of oil daily.

Palmer No. 1 Neimiller, NE cor. section 14-30-4, was moving in material. A. Brewer No. 1 McDaniels, NW cor. section 24-30-4, was a cellar.

Greenwood County

C. L. Sheedy and others No. 11 Green, NE SE NE section 11-23-9, Greenwood County, topped Bartlesville sand at 2,334 feet, total depth 2,403 feet, and pumped 15 bbls. of oil daily, with some water.

A. M. Landon and others No. 1 Slough, NE NE SW section 9-24-13, was a machine. Shull Drilling Co. No. 3 Henchman C, SW SE SW NE section 17-24-13, had spudded.

Woodson County

Frank Young No. 2-A Stevenson, NW SW NE section 5-24-14, Woodson County, had Mississippi lime at 1,717 feet, total depth 1,747 feet, plugged back to 1,740 feet, acidized and pumped 10 bbls. of oil and 30 bbls. of water daily.

Aikman & Braden No. 4 Massey, NW SW SE sec-

(Continued on Page 204)

Rocky Mountain Area

By
T. R. INGRAM

Jal Sand Pool in Lea County Is Extended One Mile South

DENVER, Colo., Jan. 24.—For the first time in several years there were no completions in the northern Rocky Mountain area. About 75 per cent of the drilling wells are shut down on account of weather.

In Colorado, Texas Co. and California Co. Wilson Creek test was unable to get a satisfactory seat for packer to test first 5 feet of Sundance sand and is running pipe to the top of that horizon.

Continental Oil Co. released location for a key test of the Minnelusa in Lance Creek, Wyoming. Paul Stock will drill a deep test on the Shoshone structure in Park County.

Cut Bank, Montana, operators are building storage for excess production, awaiting completion of new refineries being started.

NEW MEXICO

Interest in the northwest extension of the Cooper pool, Lea County, was enhanced the past week with completion of a good producer at Bartlesville Oil Co. No. 1 Whitten, SE cor. section 33-23-36. It topped lime pay at 3,590 feet, was bottomed at 3,630 feet, and flowed 600 bbls. of oil in 12 hours through tubing.

The Jal sand pool of Lea County was extended 1 mile south at Culbertson & Irwin No. 1 Alston, NW cor. section 26-25-37. It was completed for 135 bbls. of oil daily after a shot, flowing through choke on tubing. Top of pay was 3,285 feet, total depth 3,345 feet.

Continental Oil Co. No. 1-B-23 Reed, NE cor. section 23-20-36, southeast part of the Monument area, found pay at 3,800 feet and completed as the largest producer of the week at 3,858 feet, total depth. It was acidized and flowed 204 bbls. of oil in three hours through three-fourths inch tubing choke. Gas gauged 1,300,000 feet.

Four additional Lea County wells were completed the past week. Rowan Drilling Co. No. 2-B Elliott, C NW NW section 9-22-37, had pay at 3,670 feet, total depth 3,733 feet, plugged back to 3,705 feet, and flowed 23 bbls. of oil daily, through tubing, with 2,800,000 feet of gas.

Atlantic Refining Co. No. 1 Grizzell, C SE NE section 6-22-37, flowed 101 bbls. of oil daily through tubing from pay topped at 3,714 feet, total depth 3,790 feet.

Shell Petroleum Corp. No. 2-L Endura State, NE SE SE section 1-21-35, had pay at 3,775 feet, total depth 3,905 feet, and flowed 45 bbls. of fluid daily, cutting 9 per cent basic sediment, with 2,790,000 feet of gas.

Texas Co. No. 1-M State, C SE NW section 1-18-34, had pay at 4,290 feet, total depth 4,550 feet, and flowed 138 bbls. of oil through tubing in five hours, with 960,000 feet of gas.

Four completions were recorded in Eddy County, the largest producer being Etz Brothers No. 4 State, SW SE SE section 16-17-30. It flowed 380 bbls. of oil daily through tubing from pay topped at 3,218 feet, total depth 3,253 feet.

Flynn, Welch & Yates Oil Co. No. 7-A Gissler, SW SW SE section 14-17-30, had pay at 3,370 feet, total depth 3,480 feet, and flowed 180 bbls. of oil daily through casing.

Red Lake Oil Co. No. 1 Williams, C SW NW section 21-17-28, topped pay at 1,930 feet, total depth 1,978 feet, and pumped 20 bbls. of oil daily through tubing, with 396,000 feet of gas. This well previously was incorrectly reported as being in Lea County.

Carper Drilling Co. No. 2 Gissler, SW SE NW section 23-17-30, had showings of oil at 2,275, 2,525 and 3,085 feet, but sulfur water intruded at 3,502 feet and it was abandoned with a hole full of water at 3,688 feet, total depth.

Lea County

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc.
Amerada Pet. Corp. No. 2 Corrigan, C S½ SE NE sec. 4-22-37. T.D. 3,770 ft.; F. 59 B.O.P.D. through choke; may deepen.
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,585 ft.; set 8-in. 2,573 ft.
Anderson-Pritchard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,610 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie SE sec. 8-25-37. Drlg. 3,325.
Barnsdall Oil Co. No. 2 J. Whitten, SE NE SE sec. 33-23-36. R.U.R
Cities Service Oil Co. No. 2-A Clossen, NE sec. 18-22-36. T.D. 3,150 ft.; set 9⅝-in. 3,144 ft.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Continental Oil Co. No. 3-B-6 Elliott, C SE SE sec. 6-22-37. T.D. 3,778 ft.; F. 48 B.O. in 10 hrs.; testing.
Continental Oil Co. No. 1-B-9 Elliott, NW sec. 9-22-37. Drlg. 2,610 ft.
Continental Oil Co. No. 1-A-20 Jack, C NE SE sec. 20-24-37. M.I. Rotary.
Continental Oil Co. No. 3-B-31 Lockhart, SE sec. 31-21-36. T.D. 3,924 ft.; acd.; tstg.
Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat. Drlg. 3,320 ft.
Continental Oil Co. No. 7-A-14 Sanderson, NE SW NE sec. 14-20-36. Drlg. 3,450 ft.
Continental Oil Co. No. 4-B-10 Sanderson, NE SE SE sec. 10-20-36. Drlg. 3,460 ft.
Continental Oil Co. No. 3-E-17 State, C NW NW sec. 17-22-36. R.U.R.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 4-A Humphrey, NE SE NW sec. 3-25-37. Drlg. 3,245 ft.
Culbertson & Irwin No. 5-A Humphrey, NE NW SE sec. 3-25-37. Drlg. 755 ft.
Culbertson & Irwin No. 7-A Humphrey, NE SW SE sec. 3-25-37. Loc.
Culbertson & Irwin No. 1 Liberty Royalty, NW sec. 3-25-37. Drlg. 2,925 ft.
Dalport Oil Corp. No. 1 Leonard. C SE NW sec. 29-26-38. Wildcat; drlg. 2,535 ft.
Danglade & Clower No. 1 Clifton, C SW SW sec. 4-22-37. Drlg. 3,625 ft.
Danglade & Clower No. 1 Glier, C SW NE sec. 33-22-37. Drlg. 110 ft.
Eastland Oil Co. No. 1 Waldrop, C SE SE sec. 1-20-38. T.D. 4,755 ft.; S.D.O.
L. E. Elliott No. 1 Elliott, NE NE SE sec. 26-20-36. Drlg. 3,250 ft.
Emperor Oil Co. No. 1 Johns, C SW NW sec. 24-17-32. T.D. 4,390 ft.; P.B. 4,360 ft.; F. 28 B.O.P.D.; tstg.
Empire O. & R. Co. No. 1-G State, sec. 2-21-36. T.D. 3,900 ft.; S.D.
Empire O. & R. Co. No. 2-B State, C SE SW sec. 2-21-37. Drlg. 3,875 ft.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.
Geo. F. Getty No. 1 Riggs, NW sec. 1-26-37. Wildcat; Drlg. 1,000 ft.
Geo. F. Getty No. 1-F State, C NE NE sec. 36-17-34. R.U.R.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.
Gulf Oil Corp. No. 2 Cole, C NE NE sec. 16-22-37. T.D. 1,141 ft.; S.D.
Gulf Oil Corp. No. 3 Day, SE SE SW sec. 6-22-36. Derrick.
Gulf Oil Corp. No. 1 Elliott, SW SE SE sec. 15-25-37. Drlg. 3,398 ft.
Gulf Oil Corp. No. 2 Elliott, C NE SE sec. 15-25-37. Drlg. 2,650 ft.
Gulf Oil Corp. No. 1 Greer, SW sec. 21-22-36. Drlg. 3,535 ft.
Gulf Oil Corp. No. 2-E Janda, NW NE NE sec. 21-23-36. Drlg. 3,353 ft.
Gulf Oil Corp. No. 1-D Mattern, SW sec. 6-22-37. Drlg. 3,060 ft.
Gulf Oil Corp. No. 1 LeMunyon, C NE NE sec. 28-23-37. Old well; T.D. 3,666 ft.; tstg.
Gulf Oil Corp. No. 2 Stebbins, C SW NW sec. 5-22-37. Drlg. 3,193 ft.
Gulf Oil Corp. No. 1 Woolworth, C NE SE sec. 30-24-37. Drlg. 3,318 ft.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.
Carl B. King No. 1-A Stuart, NW NE NW sec. 14-25-37. Loc.
Harry Leonard No. 1 Ginsberg, NW sec. 29-25-38. Wildcat; T.D. 845 ft.; S.D. repairs.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 1-H State, C NW NW sec. 31-17-35. T.D. 252 ft.
Magnolia Pet. Co. No. 1-I State, C NW SW sec. 36-17-34. Derrick.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flow. 51 B.O. in 1 hr., naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NW SW sec. 23-17-34. Drlg. 4,328 ft.
J. A. Mascho No. 1 Cloyd, C SE SE sec. 20-22-23. Wildcat; T.D. 3,516 ft.; S.D.O.
McDowell & Weiner No. 1 Elliott, SE cor. sec. 19-21-37. T.D. 3,821 ft.; shot; C.O.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.
C. T. McLaughlin No. 1 Imperial Royalties, NW SE NW sec. 9-24-37. T.D. 3,436 ft.; waiting on spudder.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,695 ft.
Ohio Oil Co. No. 2 Grizzell, C NW SE sec. 5-22-37. T.D. 600 ft.; prep. to drill in.
Ohio Oil Co. No. 1 Hardy, NE NE SE sec. 20-21-37. T.D. 3,612 ft.; drlg. by tools.
Ohio Oil Co. No. 1 Kutter, D, C SW SW sec. 18-19-37. Drlg. 3,590 ft.
Ohio Oil Co. No. 4 State-Hansen, C W½ SE NE sec. 16-20-37. M.I.M.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Ohio Oil Co. No. 1 State-Warn, C SE NW sec. 21-17-35. R.U.R.
Lem Peters No. 1 Graham, sec. 27-22-37. T.D. 3,367 ft.; W.O.C.
Parker Drlg. Co. No. 1 Irwin, C W½ SW SW sec. 35-24-37. Drlg. 785 ft.
Phillips Pet. Co. No. 1 Helen, C E½ SE NE sec. 33-24-37. Loc.
Phillips Pet. Co. No. 1 Hale, C NE SE sec. 35-17-34. Drlg. 4,190 ft.
Phillips Pet. Co. No. 1 Commissioner C SW SE sec. 30-17-35. Loc.
Phillips Pet. Co. No. 1 New, C E½ NE NE sec. 26-20-36. Drlg. 3,640 ft.
Phillips Pet. Co. No. 1 Santa Fe, C SW NW sec. 31-17-35. Loc.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Plains Prod. Co. No. 2 Moseley, SW NE SE sec. 34-24-37. T.D. 3,227 ft.; rng. csg.
Repollo Oil Co. No. 1 Powhatan Carter, SW SW NE sec. 9-24-37. T.D. 3,705 ft.; P.B. 3,600 ft.; F. 29 B.O. P.D. C.O.
Repollo Oil Co. No. 3 Christmas, NW NW NE sec. 28-22-37. T.D. 3,726 ft.; tstg.
Repollo Oil Co. No. 4 Roach, NW NW SW sec. 21-20-37. T.D. 3,875 ft.; P.B. 2,860 ft.; shot; R.U.S.T.; to C.O.
Repollo Oil Co. No. 4-D Stuart, SW sec. 10-25-37. T.D. 780 ft.; rng. csg.
Repollo Oil Co. No. 2 White, SE sec. 24-20-36. T.D. 3,866 ft.; to acidize.
Rowan Drlg. Co. No. 2-A Elliott, C NE SW sec. 27-22-37. Drk.
Samedan Oil Co. No. 5 Hughes, C NE SW sec. 10-23-37. Drlg. 2,395 ft.
Shell Pet. Corp. and Devonian Oil Co. No. 3 Christmas, C SW NE sec. 21-22-36. T.D. 3,855 ft.; P.B. 3,840 ft.; S.D.
Shell Pet. Corp. No. 1 Grizzell, SE sec. 8-22-37. Drlg. 2,148 ft.
Shell Pet. Corp. No. 1-A State, C NW SE sec. 16-23-36. Bldg. roads.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.
Skelly Oil Co. No. 5 G. W. Sims, C SE NW sec. 10-23-37. T.D. 3,300 ft.; W.O.C.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.
Southern Pet. Exploitation Co. No. 2 Downes, C SW SW sec. 32-21-37. Cellar and pits.
Stanolind O. & G. Co. No. 13-A Gilluly, C SE NW sec. 24-20-36. T.D. 3,865 ft.; swb.
Stanolind O. & G. Co. No. 1-A Hill, C NW SE sec. 6-21-37. Drlg. 3,755 ft.
W. H. Street No. 3 Woods, C NW NE sec. 22-22-37. T.D. 3,380 ft.; rng. csg.
Sun Oil Co. No. 2 Lanehart, C NE SE sec. 20-25-37. T.D. 3,620 ft.; to shoot.
Texas Co. No. 2-B Cagle, SW sec. 15-26-37. T.D. 3,216 ft.; 5,000,000 ft. gas.
Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. Drlg. 2,685 ft.
Texas Co. No. 3 Fristoe, NW SE NE sec. 3-25-37. Cellar and pits.
Texas Pacific Coal & Oil Co. No. 7-A State, Acct. 2, C NW NW sec. 8-22-36. T.D. 3,875 ft.; to swab.
Texas Pacific Coal & Oil Co. No. 8-A State, Acct. 2, C SE SE sec. 7-22-36. T.D. 192 ft.; rng. csg.
Texas Pacific C. & O. Co. No. 9-A State, Acct. 2, NW SW NE sec. 7-22-36. Loc.
Two States Oil Co. No. 2 Downes, C NE NE sec. 6-22-37. Drk.
Western Gas Co. No. 1 Cowden, SE cor. sec. 30-23-37. T.D. 3,560 ft.; Swb. 13 B.O. in 3 hrs.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-27. T.D. 2,100 ft.; S.D.
Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. Drlg. 780 ft.
Ed Bryant No. 1 Stebbins, C NE SW sec. 19-20-29. T.D. 1,000 ft.; S.D.O.
Danciger O. & R. Co. No. 3 Turner, SW NE SW sec. 18-17-31. T.D. 3,510 ft.; F. 35 to 45 B.O.P.D.; tstg.
D. & B. Oil Co. No. 2 Jenkins, SW NW NW sec. 20-17-30. T.D. 3,265 ft. F. 25 B.O.P.D. while C.O.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
Franklin Pet. Corp. No. 1 McIntyre, NE NW SW sec. 20-17-30. T.D. 3,270 ft.; F. 200 B.O.P.D.; tstg.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. T.D. 1,170 ft.; S.D.O.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. Spd. 100 ft.

F. W. & Y. Oil Co. No. 1-B Gissler, SW sec. 15-17-30. Drlg. 980 ft.
F. W. & Y. Oil Co. No. 2-B Gissler, C NW NW sec. 24-17-30. Drlg. 3,185 ft.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Geo. F. Getty, Inc., No. 1-E State, NE SW SW sec. 16-17-31. T.D. 3,567 ft.; to pump.
Grayburg Oil Co. No. 10 Burch, SE NE NE sec. 19-17-30. T.D. 3,242 ft.; Swb. 70 B.O.P.D.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. Drlg. 2,345 ft.
M. A. Grisham No. 1 Chaytor, NE sec. 10-24-26. T.D. 1,967 ft.; C.O.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. Drlg. 950 ft.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. Drlg. 744 ft.
Woodworth Hawkins No. 1 Mack, C SW SW sec. 20-24-27. Drlg. 2,035 ft.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,495 ft.; S.D. for new rig.
B. M. Keohane et al No. 1 Shannon, SE cor. sec. 27-16-31. M.I.M.
Nash & Windfohr No. 8-A Jackson, sec. 13-17-30. Drlg. 2,775 ft.
Nash-Windfohr & Brown No. 2-B Stevens, NW sec. 13-17-30. Drlg. 2,775 ft.
Repollo Oil Co. No. 3-D McIntyre, SE cor. sec. 17-17-30. Drlg. 2,970 ft.
Repollo Oil Co. No. 1-A Parke, NW NE NE sec. 22-17-30. Drlg. 3,345 ft.
Repollo Oil Co. No. 2 West, SW SE SE sec. 9-17-31. T.D. 3,757 ft.; P.B. 3,727 ft.; F. 68 B.O.P.D.; C.O.
Paul Sargent No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31. T.D. 4,003 ft.; U.R.
Texas Co. No. 1 Welch, sec. 30-20-31. Drlg. 1,160 ft.
W. K. Royalty No. 2 State, C NE NW sec. 16-17-31. R.U. mch.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. Drlg. 3,012 ft.
Neil Wills et al No. 1-A State, C S½ SW SE sec. 17-20-30. Drlg. 70 ft.
Martin Yates, Jr. No. 1 Conlon, SW NW NW sec. 7-24-27. Drlg. 1,250 ft.

Chaves County

English & Hamon No. 11 Billingslea, SE sec. 9-15-29. T.D. 3,680 ft.; P.B. 3,456 ft.; reshot at 3,383-93 ft.; 1 baller oil and 1 baller wtr. an hour; may reshoot.
E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. Drlg. 900 ft.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-26. M.I.M.
Mathieson et al No. 1 Code, C NE NW sec. 19-15-27. T.D. 1,230 ft.; S.D. repairs.

Curry County

Bond & Harrison No. 1 Hart ranch, C NW SE sec. 13-2n-31. T.D. 3,258 ft.; S.D.O.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W. prep. to deepen from 5,850 ft.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.; flwg. wtr.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 25 ft.; S.D.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

George Mulvey No. 1 State, SW cor. sec. 11-25-8. T.D. 263 ft.; S.D.
Fred Turner, Jr. No. 1 Ella Everett, C SE SE sec. 34-22-13. Drlg. ahead.
Fred Turner, Jr., No. 1 H. V. Everett, C SE SE sec. 28-22-13. Spd. and S.D.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. T.D. 455 ft.; S.D.O.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 19-11n-4e. S.D. 3,750 ft. for csg.

McKinley County

Guarantee Oil Co. No. 1 fee, NW NW NW sec. 31-20n-9w. S.D. 327 ft.
S. Dysart et al No. 1 Bouton, CEL NW NE sec. 14-14n-10w. T.D. 1,390 ft.; re-ran 12½-in. to 1,320 ft. and S.D.
Bill Forth No. 1 Comanche, C NW SE sec. 29-20n-10w. Drlg. 200 ft.

San Juan County

Continental Oil Co. No. 69 Rattlesnake, SE NW SE section 2-29n-19w, Rattlesnake field, was erroneously reported abandoned last week. It was completed at 851 feet in sand at 842-850 feet for 17 bbls. per day.

C. E. Brawley No. 1 Godrun, C SE SW sec. 34-30n-11w. Drlg. 90 ft.
Continental Oil Co. No. 67 Rattlesnake, C SE sec. 2-29-19w. Drlg. 790 ft.; S.O. and C.

Socorro County

Central New Mexico Oil Co. No. 1 Brown, SE NW sec. 16-3n-1e. Drlg. 2,050 ft.

Valencia County

C. A. Brober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. S.D. 900 ft.; chge. to rotary.
Big Three Oil Co. No. 1 Dalles Townsite, SE SE NW sec. 5-6n-1e. T.D. 6,114 ft.; P.B. to 5,971 ft. and cmtd. Whipstock.

COLORADO

Adams County

Oklahoma Oil Co. No. 1 Baxter, C SW sec. 2-3s-66w. S.D. 4,704 ft.
Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. S.D. 4,345 ft.

Archuleta County

Chromo O. & G. Co. No. 1 Fitzhugh, C SW SW sec. 34-33n-1e. Drlg. 717 ft.
K. L. Kendrick No. 1 Crowley, sec. 2-32n-1e, S.D.O. at 1,208 ft.
Pagosa Oil & Dev. Co. No. 1 Macht. sec. 32-36n-1e. Res. at 328 ft. after laying wtr. line.

Boulder County

J. B. Furstenberg No. 1 Foote, NE NW SE sec. 20-1n-70w. T.D. 3,585 ft.; Rep. boiler.

Cheyenne County

Gulf Oil Corp. No. 1 Union Pacific-Larson, C SE NW sec. 13-13s-49w. Drlg. 3,635 ft. in red sh. and sd.

Grand County

Interstate Oil & Ref. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. Drlg. 3,000 ft.; inc. in gas; cuttings showing more L.

Huerfano County

S. W. Pressey No. 2 Alamo, C SW SE sec. 3-27n-68w. Drlg. 750 ft. in sh. with S.G.; no water to this depth.
S. W. Pressey No. 1 Ojo, SW NE sec. 10-29n-69w. Recmtg. to S.O.G. at 3,550 ft.

Jackson County

Colorado Oil Ref. Co. No. 1 North Park Coal, NW NW sec. 18-9n-78w. Res. and drlg. at 2,960 ft. in Mancos sh.

LaPlata County

N. Spatter No. 1 Bryce, SE SW SW sec. 31-33n-9w. T.D. 1,510 ft.; fsg. tools.

Las Animas County

Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61w. T.D. 2,000 ft. (C.D.) in sd.; S.O. and G. at 1,955 ft.; U.R. 10-in. through Glorietta sd.

Lincoln County

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. S.D. 2,860 ft.

Logan County

Transylvania Dev. Co. No. 1 Sheldon, SE NW SE sec. 3-10n-55w. Drk. up; W.O. drlg. contr.

Mesa County

Midwest Drlg. & Dev. Co. No. 1 Callahan, NE NW SE sec. 30-8s-97w. T.D. 3,337 ft.; rec. tools; drlg. ahead.
Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. Cmtd. 13⅜-in. at 630 ft. with 480 sacks and S.D. for winter.

Moffat County

Morapas Pet. Co. No. 1 Coles, SW SW SE sec. 1-3n-92w. S.D. 2,670 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW sec. 31-36n-17w. T.D. 3,840 ft. fsg.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. 5,620 ft.

Pitkin County

Glenco Dev. Co. No. 1 Govt., NW cor. sec. 9-10s-89w. S.D. 2,808 ft. to make new contr.

Pueblo County

Ed Solomon No. 1 Smith, E½ sec. 21-21s-60w. Bldg. rig.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW sec 16-1n-91w. S.D. 2,135 ft. until spring.
Texas Co. and California Co. No. 1 Unit, SW SE NW sec. 35-3n-94w. TD. 6,918 ft.; P.B. to top Sundance; drilled out 5 ft.; unable to set packer to tst.; rng. 7-in. to top of sd.

Routt County

Mid-Colo. Pet. Co. No. 1 Omholt, NE NE SE sec. 29-4n-87w. Drlg. below 3,120 ft.
Major Oil Reserve No. 1 State, SW NW sec. 17-6n-86w. Rig; S.D. until spring.
Craig & Moore No. 1 Erwin, C SW NE sec. 33-7n-85w. Spd. and S.D.

WYOMING

Albany County

G. R. McConnell No. 1 Govt., CWL SW SE sec. 6-15n-75w. S.D. 920 ft.
Wyco Oil Co., Inc., No. 3 Chappel, NE NE NW sec. 33-21n-76w. Drlg. 2,546 ft.

Big Horn County

Ohio Oil Co. No. 3 Sidon Canal, NW SW (Lot 40), sec. 24-56n-97w. Loc.; W.O. rig.
Joan Oil Co. No. 1 Howell, sec. 32-55n-97w (Lot 63). Drlg. 2,430 ft.; 10-in. at 2,150.
Peay Oil Co. No. 1 Denio, Tr. 43-C, sec. 15-55n-97w. S.D. 3,930 ft.

Campbell County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 1-51n-73w. Rry. to spd.
Powder River O. & G. Co. No. 1 Rhodes, NE SE SW sec. 24-49n-74w. S.D. 650 ft.

Carbon County

Italo Pet. Co. No. 1 Tunney-Bragg, NE SE NW sec. 11-26n-81w. Drlg. 393 ft.
Sinclair-Wyoming Oil Co. No. 12-B Wertz, SE NW NW sec. 7-26n-89w. Drlg. hd. sh. 3,215 ft.
Ohio Oil Co.-California Co. No. 4-A Kyle, 661 ft. from N line and 648 ft. from E line, sec. 26-21n-79w. Drlg. 2,670 ft.
Ohio Oil Co. No. 13 Harrison & Cooper, SW SE SW sec. 35-20n-78w. T.D. 3,157 ft.; tstg. Sundance.
Ohio Oil Co.-California Co. No. 4-B Kyle, C SW SW sec. 24-21n-79w. W.O. rig.
Ohio Oil Co.-California Co. No. 6 Union Pacific-Johnson, C SW SE sec. 23-21n-79w. Drlg. 4,434 ft.
Producers Oil Co. No. 1, CNL sec. 14-20s-88w. Drlg. 194 ft.
Ohio Oil Co.-California Co. No. 5 Cronberg-U.P., C NW NW sec. 25-21-79w. S.D.O. 5,765 ft.
Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78w. S.D. 2,347 ft.
Ohio Oil Co. No. 14 H. & C. SE NW SW sec. 35-20n-78w. Loc. outside well E. side Rock River field. (first report).

Converse County

New Era Fuel Corp. No. 1 Layne, SE NW NE sec. 27-32n-69w. T.D. 560 ft.; cmtd. 6⅝-in. at 525 ft. for W. S.O.; S.G. 490 ft.
New Era Fuel Corp. No. 1 Gaspar, NW NW SW sec. 25-32n-69w. Cmtd. 6⅝-in. on bttm. at 525 ft.
D. O. Gray No. 1 Wm. Lane, SW SE SE sec. 22-32n-69w. Drlg. 275 ft.
Chadron-Osage Oil Co. No. 1 O'Meara, NE NE sec. 28-32n-69w. Drlg. 200 ft.
Putnam et al No. 1 Probesh, SE SE sec. 29-32n-69w. Drlg. 250 ft.
Kaufman & Quinlan Bros. No. 1 Lane, SE NW NE sec. 27-32n-69w. R.U. mach.
Ainsworth Oil Co. No. 1 Marberger, NE SE NE sec. 34-32n-69w. T.D. 619 ft.; rng. 6⅝-in. for W.S.O.
Hall-Thornton et al No. 1 Roth, C NW SE sec. 13-32n-69w. Cmtd. 6⅝-in. at 500 ft.; drlg. plug.
Wyoming Southern Oil Co. No. 1 Lane, C NW NE sec. 27-32n-69w. Spd. and S.D.
Elbe Oil Ld. & Dev. Co. No. 1 Benham. NW NE sec. 5-31-70w. M.I.M.
Tom Carney No. 1 Beaver, SE SE SW sec. 28-35n-68w. Some material on loc.
Chadron-Osage Oil Co. No. 1 State, SW cor. sec. 16-32n-69w. T.D. 4,060 ft.; cmtd. 8¼-in. at 4,040 ft.; W.O.C.
Osage Trust Co. No. 1 Miller-Govt., SE NW NW sec. 29-32n-69w. Set 8¼-in. on bttm. at 425 ft.; drlg. plug.

Fremont County

Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33n-92w. Drlg. below 3,225 ft.
Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. Cg. 7,229 ft. in Frontier.
Consolidated Oil Properties No. 3, C SW SE sec. 16-1n-1w. T.D. 630 ft. in L.; tstg. before acid.
H. Kenyon Burch No. 1 Enos, CEL NE NE sec. 28-3n-1w. S.D.O. 970 ft.; no shows.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. S.D. 875 ft.
Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27-90w. Drlg. 3,255 ft.

Hot Springs County

Italo Pet. Corp. No. 1 Skelton-Govt., SE SW NE sec. 13-44n-98w. Drlg. 300 ft.; ran 1 joint 20-in.
Delaware Oil Co. No. 1 Govt-Skelton, SE SE sec. 2-43n-96w. Drlg. L. 175 ft.
Oscar B. Grace No. 4 Govt., CNL SE NW sec. 21-43n-92w. T.D. 380 ft.; fsg. bailer.
J. W. Bales No. 1 Govt. CWL SE SW sec. 28-43n-93w. Cmtd. 12½-in. at 60 ft.

Lincoln County

H. M. Eller et al No. 4 Govt., SE NW SW sec. 32-19n-116w. T.D. 401 ft.; will test S.O. in lenticular sd. at 397-401 ft.
H. C. Harris et al No. 1 Govt., SE NW NW sec. 32-21n-117w. Drlg. 260 ft.
Place Oil Co. No. 1 Davis, SE SE SE sec. 9-26n-11w. Drlg. 1,350 ft.

Natrona County

Stanolind O. & G. Co. No. 11 Wyo. Asso. Tensleep, C NE NW sec. 35-40n-79w. T.D. 4,043 ft.; cmtd. 6⅝-in. at 4,032 ft.; tstg.
Stanolind O. & G. Co. No. 29 Wyo. Asso. Tensleep, C SW SW sec. 21-40n-79w. T.D. 4,100 ft.; cmtd. 6⅝-in. at 4,099 ft.; perf. pipe and tstg.
General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. Drlg. 5,361 ft.
Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78w. S.D.O. 1,090 ft.
Stanolind O. & G. Co. No. 11 Wyo. Asso.-T.P.-35, C NE SW sec. 35-40n-79w. Cg. 3,980 ft.; top Tensleep 3,926 ft.
Stanolind O. & G. Co. No. 8 T.P.-Wyo.-Asso.-35, C NW NW sec. 35-40n-79w. r.b. 3,172 ft.

Niobrara County

Continental Oil Co. No. 6-B Schuricht, SW SW SE section 6-35n-65w, an east offset to the Cobb-Holly No. 2 Novick and a north offset to MacKinnie No. 2 Thompson, the two best Minnelusa sand wells in Lance Creek, made 274 bbls. in 24 hours before acidizing. It is shut in to acidize.

Continental Oil Co. made a location for No. 3-A Diehlman, SE SE SW section 5-35n-65w, to go to the Minnelusa. It is on the southeastern side on about the same structural contour drawn on the top of the Dakota as Cobb-Holly No. 2 Novick on the southwest, Ohio No. 10 Lamb on the southeast, Minnelusa Oil Co. No. 1-A Lamb on the north and Continental No. 8 Rohlff on the northwest. It is an important test which will yield information as to the extent of the Minnelusa pay for use in any negotiations to bring that horizon under the provisions of the unit agreement.

Operator has discontinued giving out information on C. L. Price No. 1 Lamb, an important outpost well on the west side. Last depth reported was 3,309 feet.

Continental Oil Co. No. 3-A Diehlman SE SE SW sec. 5-35n-65w. C. and P. (first report).
Argo Oil Co. No. 6 Ford, NW SW NW sec. 33-36n-65w. T.D. 330 ft.; rng. surf. csg.
C. L. Price No. 1 Lamb, NE NW NW sec. 7-35n-65w. Drlg. below 3,309 ft.
Ohio Oil Co. No. 8 Converse Sheep, NE SE SW sec. 32-36n-65w. Cg. 4,344 ft. in upper Minnelusa; base r. b. 4,305 ft.; base Minnekata 4,339 ft.
Continental Oil Co. No. 6-B Schuricht, SW SW SE sec. 6-35n-65w. T.D. 5,261 ft.; tstg.
J. M. Huber Corp. No. 1 H. & M., NE NE NE sec. 8-35n-65w. W.O. rig.
J. M. Huber Corp. No. 1 Joss, NE SE NW sec. 6-35n-65w. T.D. 4,096 ft.; O.W.D.D.; M.I.R.
Lewis Goekel No. 1 NE SE NW sec. 31-35n-62e. Resumed drlg. 1,550 ft.
Continental Oil Co. No. 3 Apex-1, SE SE NE sec. 34-36n-65w. T.D. 5,480 ft.; cmtd. back to 3,217 ft.; drilled to 3,235 ft.; mkg. directional survey.
W. A. Maupin et al No. 1 Berggren, NW sec. 23-35n-63w. Drlg. 180 ft.
Ohio Oil Co. No. 2 Leo-O.P.C. NE NE SE sec. 35-36n-65w. Rig; stdg.
MacKennie Oil & Drlg. Co. No. 3 Thompson, NW NW NE sec. 7-35n-65w. Cellar and pits; M.I. rot.

Park County

A deal has been completed whereby Paul Stock has acquired a considerable block of acreage on the Shoshone anticline near Cody, sometimes known as the Cody dome, and will make a deep test of the

structure. Included in the deal is the Lenco Petroleum Co. No. 1 Government, SE SE NE section 20-53n-101w, which was drilled to 2,140 feet in 1928. Rotary is being moved in to deepen the hole to the Tensleep and possibly the Madison. The structure is well known. It is a long, narrow anticline with steep dips and good closure. In 1928 Ohio Oil Co. drilled in the CNL NW NW section 27-53-101. It had the top of the Embar at 4,764 feet and drilled to 4,780 feet, where it ran into sulfur water. The hole was plugged back and made 45 bbls. per day for some time before it went to water and was abandoned. Ohio then drilled in the SE SW section 21-53-101 and completed a 70-bbl. well in Embar at 4,488-4,540 feet. It afterwards went to water. No deep test has been drilled on the structure and these tests were completed before acidization came into use.

Paul Stock, No. 1 Govt., SE SE NE sec. 20-53n-101w. M.I.M. to deepen from 2,140 ft. (first report).
Henry Harriman No. 1 Govt., NE SE NW sec. 10-56n-98w. T.D. 2,053 ft.; 1,000,000 ft. gas in Peay sd. topped at 1,963 ft.; will kill and D.D.
Resolute Oil Co. No. 4 Northern Pacific, C NE NW sec. 2-57n-101w. S.D. 8,657 ft.
Resolute Oil Co. No. 3 Govt., C NE NE sec. 20-57n-101w. S.D. 8,670 ft.
Ohio Oil Co. No. 4 Mack-O.P.C.-4, SE SW SE sec. 30-58n-99w. T.D. 1,940 ft.; W.O. tester; S.G. in top Frontier at 1,687 ft. (cor. loc.)

Platte County

Dividend O. & R. Co., Inc., No. 1 CSL NW SW sec. 17-24n-66. Drlg. 2,415 ft.; C.D.

Sweetwater County

Selegna Oil Co. No. 1 Union Pacific, SW SW sec. 11-20n-104w. Drlg. 2,100 ft.
Rocky Mountain Drlg. Co. No. 1 Lee, NE NW SE sec. 10-19n-104w. Cmtd. 13⅜-in. on bttm. at 380 ft.
Mountain Fuel Supply Co. No. 1 Agnes Fay, 330 ft. from E line and 1,980 ft. from S line, sec. 18-18n-103w. Cg. 2,382 ft.
Rocky Mountain Drlg. Co. No. 1 Osborne, SE SE SE sec. 12-18n-104w. Drlg. 2,493 ft.; 3,000,000 ft. gas at 2,480 ft.
Mountain Fuel Supply Co. No. 1 Hoyt, SW SW SW sec. 32-19n-103w. Cg. 2,618 ft.
Mountain Fuel Supply Co. No. 1 Lauzer, NW NW NW sec. 30-18n-103w. T.D. 1,875 ft.; cmtd. 10-in. at 1,800 ft.; perf. at 1,680-1,705 ft.; gauged 1,700,000 ft.; will perf. 10 ft. more and tst. again.
Mountain Fuel Supply Co. No. 1 Clark, NW SE SW sec. 12-19n-104w. S.D. 300 ft.
Italo Pet. Corp. No. 1 Govt., SW SW SW sec. 36-13n-95w. S.D. 610 ft.
Sinclair-Wyoming Oil Co. No. 77, SE NE NE sec. 10-26n-90w. T.D. 4,029 ft.; rng. tubing to tst.; may D.D.
Mountain Fuel Supply Co. No. 1 Union Pacific, C SW SE sec. 13-17n-104w. T.D. 3,330 ft.; P.B. to 3,241 ft.; S.D. for winter.
Mountain Fuel Supply Co. No. 1 Union Pacific, C SE NE sec. 29-15n-104w, S of Baxter Basin. Loc.

Uinta County

E. A. Ottman et al No. 1 Govt., C SE NW sec. 26-14n-110w. Drlg. 1,230 ft.; S.S.O.

Washakie County

Lewis Storm No. 1 Brome, C SE SW sec. 30-48n-90w. S.D. 1,750 ft. for csg.

Weston County

Chas. F. Martens No. 8, SW SW NW sec. 24-36n-64w. Loc.
Osage Trust Co. No. 1, SE NW NE sec. 22-36n-64w. Drlg. below 500 ft.
Bradley-Maneval Oil Co. No. 7, CWL NE NE sec. 20-46n-63w. R.O.G.
Federal Oil Co. No. 9, CNL SE SE sec. 15-46n-64w. R.O.G.
Cha. Goodell et al No. 1 State, C NE NE sec. 23-44n-63w. Ready to spud.
John Brophy No. 1 George, SW SE NW sec. 26-48n-64w. Drlg. 1,864 ft.; 470 ft. in Minnelusa.
Sisty et al No. 1 Carmine, SE SW sec. 31-44n-62w. S.D. 835 (C.D.) ft. until spring.
Le Faivre Oil Synd. No. 1 Martin, NW NW SW sec. 29-45n-68w. Drlg. 2,550 ft.; will U.R. 10-in. at 2,130 ft. for water; S.O.
Giles & Proutt No. 1 Govt., CEL SW NE sec. 29-45n-61w. S.D. 179 ft.
T. L. Hopkins No. 1, CNL NE NE sec. 36-47n-63w. Spd. and S.D.
Henry Egert No. 6, C NE SE sec. 8-46n-63w. Spd. and S.D.

MONTANA

Big Horn County

P. O. Oil & Gas Co. No. 1, NW NE NE sec. 25-9s-35e. S.D. 339 ft.
E. L. Dana No. 1 Hardy, SW NW sec. 22-9s-35e. S.D. 700 ft.

Carbon County

R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-10e. Cmtg. cave at 1,610 ft.
Miracle Oil Co. No. 2, CWL, NE SE sec. 3-6s-23e. Drlg. 1,905 ft.
Geo. Muth et al No. 1, CSL SE SE sec. 23-6s-23e. S.D. indef. at 1,500 ft.
Henderson Prod. Co. No. 1-H-11 Elk. 11, SE SE NW sec. 35-9s-23e. S.D. 1,626 ft. for 8¼-in.; top Frontier 1,608 ft.; small S.O.
Sha-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. Drlg. 2,970 ft.
Sha-Wa Pet. Co. No. 2 Govt., SW SE NE sec. 35-9s-23e. Loc.; Greybull sd. test.

Choteau County

Security Pet. Co. No. 1 Johnson, NE sec. 23-26n-2e. S.D. 1,609 ft. (C.D.) for winter.

Cascade County

C. Leonard Smith No. 1-A Smith-Schwingle, NE NE SW sec. 14-22n-2e. T.D. 750 ft.; fsg. tools.

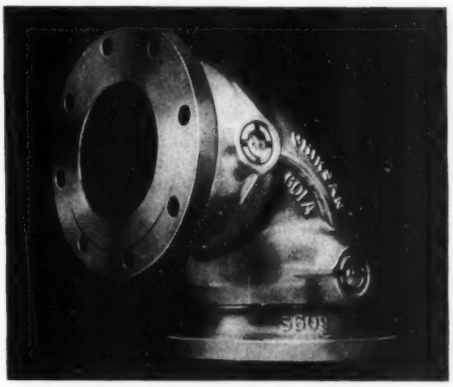
Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW sec. 10-36n-50e. Drlg. 1,675 ft. after rng. 10-in.

(Continued on Page 206)

When ordinary swing joints let go . . .

Chiksan still says **LET'S GO!**



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are extensively used for Oil and Gasoline Loading Racks, Tank Cars, Cementing Hose, Expansion Units, Water Lines, Chemical Plants, Portable Coring Units, Lathes and other shop machinery, protection of Oil Tanks from Shifting Ground, Dock Risers, and any other applications where flexibility is essential.

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—Seven Chiksan Swing Joints give seventeen swivel movements to assure complete flexibility. All steel construction means complete safety at all pressures and makes this hose ideal for both pressure and ordinary drilling. Patented Neoprene packing elements are resistant to all petroleum products and assure superior performance, whether circulating with mud or oil.

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—A light auxiliary swivel that has a multitude of uses around a rig. It allows complete rotation in both horizontal and vertical planes, and has a tee connection for running wire line instruments while circulating.

WHEN you first install Chiksan Ball Bearing Swing Joints you will marvel at their smooth streamlined exterior . . . their simple rugged design that has nothing to tighten, nothing to get out of adjustment. But your greatest revelation will come after years of hard continual service, for when joints are "washed up", Chiksan Swing Joints are still in the prime of life — still pressure-tight, leak-proof, easy turning!

You see, the patented construction of Chiksan Ball Bearing Joints sets them entirely apart from others. Double rows of hardened steel balls not only carry all radial loads and maintain the joint in perfect alignment at all times, but they also maintain a pre-regulated thrust load upon the packing element, keeping it always pressure-tight and leak-proof. The design of the patented packing element causes it to expand tighter as pressure is increased . . . but the joint will not bind under even the highest pressures because friction is reduced by patented brass retainer rings.

Another lifetime feature — the packing element is made of oil resisting Neoprene and the joint is completely resistant to ALL petroleum products!

Docks . . . boats . . . loading racks . . . in fact, wherever you turn in your refinery there's a place where Chiksan Ball Bearing Swing Joints will give longer life, smoother performance and decreased maintenance costs.

Our engineers will gladly furnish definite recommendations for Special Swing Joint Applications. Bring us your Swing Joint problems.

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CHIKSAN OIL TOOL CO. LIMITED

FULLERTON, CALIFORNIA, GULF ENGINEERS, INC., HOUSTON, TEXAS

Michigan Field Report

By
O. C. PRESSPRICH

Contradictory Results Found in Wells in Buckeye District

SAGINAW, Mich., Jan. 24.—While crude oil prices and proration occupied the main attention of Buckeye operators this week, developments in the south (Oard) pool of Buckeye presented a multiplicity of angles somewhat apart from the accepted trend of previous production in the area. Where mediocre to poor producers had previously been gauged in the so-called midway sector of the south pool, highly favorable gauges were recorded this week, while thoroughly proved locations expected to produce heavily made poor showings, presenting an enigma to geologists and drillers alike.

The discovery sector of the midway pool leaped into prominence with a favorable addition—the largest to date—while an eastern extension of the midway discovery pool indicated possibility of opening comparatively untested territory in section 24.

Top producer of the week in the Buckeye pools was the midway test, Beaver Trust No. 3 Wooding, SE SE SE section 23-18n-1w, which gauged 600 bbls. after acid. To the east of the Beaver Trust well in section 24, where little prospecting has been carried on, J. Beck No. 2 Buehler, NW SW SW section 24-18n-1w, added a 317-bbl. daily producer after acid in territory previously regarded as holding scant prospects of heavy production. While these two favorable producers in sections 23 and 24 were being brought in, other sections on the south (Oard) pool formerly regarded as fertile locations—sections 25, 26 and 35—failed to register up to previous tests nearby.

Two tests in section 25 brought in this week hovered on the verge of failure, one showing no return whatever after acid. They were Truss Petroleum Co. No. 3 McMahon, NE SW NW section 25-18n-1w, which was scheduled to be shot when it made no return after acid, and C. H. Bell No. 3 McMahon, NW NW SW section 25-18n-1w, which was acidized and returned only 24 bbls. daily production. Rex Oil & Gas Co. No. 1 Beacker, NE SE SW section 26-18n-1w, in the heart of productive territory and surrounded by good producers, brought in an 85-bbl. well after acid to add another puzzle to the week's developments.

Section 26 formed the connecting link between section 23—discovery sector of the midway pool—with the south pool proper, and has developed some heavy producers since midsummer. Another puzzle was Gordon Oil Co. No. 3-D State, NW NE NW section 35-18n-1w, which gauged 60 bbls. natural, being the only natural producer of the week in Buckeye, although a light well considering the good producers surrounding it. Considering all six developments in the south pool this week, contradictions to previously established production trends were many. Developments apparently forecast more midway pool development, extending eastward into section 24.

Only two producers were recorded in the north (Wicklund) pool. One was Garfield Petroleum Co. No. 3 fee, S half SW NE section 14-18n-1w, which gauged 40 bbls. daily after acid. Though a small producer, the well was looked upon as indicative of further exploration in section 14, which lies directly south of the Wicklund discovery well. The Garfield fee test is four locations south of the north Buckeye field's discovery well. Sun Oil Co. added to its prolific holdings with the No. 5 Card, NE SW NW section 10-18n-1w, which showed itself a 575-bbl. producer after acid.

Gladwin County—Secord Township

Hopes of a producing pool in two sections in Secord were dimmed with two dry holes. Mount Pleasant Drilling & Production Co. No. 1 Seitz, NW NW NE section 23-19n-1e, has been ordered plugged and abandoned, and M. F. Whitehill No. 1 Taylor, SE SE NE section 11, half a mile to the north of the Seitz well, faced a similar fate after no show in the pay stratum. Water was encountered at 3,452 feet.

Gladwin County—Bentley Township

McClanahan Oil Co. No. 1 Connelly, NW NW SW section 35-17n-2e, added a favorable producer to the Bentley field this week. After being acidized it gauged 92 bbls. during a 13-hour run, and was holding to production of about 150 bbls. daily later in the week.

Bay County

Two more dry holes loomed in as many townships in Bay County as exploration continued in the hope of finding an elusive pay pool. Gulf Refining Co. No. 1 Marston, SE SW SE section 1-14n-4e, was treated with 1,000 gallons and flowed 23 bbls. of oil during the first hour. Operators were swabbing with no indications of commercial production. Century Oil & Gas Co. No. 1 Wilson, SE SE SE section 27-17n-3e, will be plugged and abandoned after finding the Dundee dry.

Gladwin County—Hay Township

Wicklund Development Co. No. 1 Kimbie, SW NE SW section 16-18n-1e, was acidized and gauged 100 bbls. daily, while Petroleum Investors, Inc., No. 2 Knight, SW NW SW section 16-18n-1e, was given a second treatment and responded with a 25-bbl. well on pump. The two tests are the first in several weeks to be brought in in Hay Township, which is south of Bentley Township, both lying to the east and north of northern Buckeye.

Huron County—Grant Township

Abandonment orders have been issued for C. W. Teater No. 1 Martin, NE SE NE section 15-15n-11e, which failed to show in the pay stratum.

Isabella County—Nottawa Township

Isabella County's prospective new pool in Nottawa received a setback when Cryden & Rowmor No. 1 Tillman, SW SE NE section 35-15n-5w, was slated for abandonment.

Isabella County—Denver Township

Arthur Morris No. 1 Lawler, NW SW NW section 20-15n-3w, was listed for abandonment after acidizing a small show.

Isabella County—Sherman Township

Pure Oil Co. No. 2 Latham, SE SE SE section 32-15n-6w, developed production of 433 bbls. daily after acid to add another in a continuous string of favorable producers owned by Pure in the Sherman field.

Ogemaw County—Ogemaw Township

M. L. Jorgenson No. 2 Heintz, NW NW NE section 24-22n-1e, was acidized to production of 75 bbls. daily late this week.

St. Clair County—Fort Gratiot Township

A dry hole was recorded for Great Basin Oil & Gas Co. No. 1 Ferguson, SE NE SE section 17-7n-17e, in which its sponsors had expected to find a continuing trend of production extending from the Petrolia, Ont., pool.

Gratiot County—Newark Township

Continuing the search for a producer in Gratiot County, with a long list of failures in the background, Bliss Trust and Red-Man Oil Co. No. 1 Martin Estate, SW SW NW section 26-10n-3w, was ready to enter the pay this week. Operations were shutdown when 1 foot in the Dundee late last week.

St. Clair County—Clyde Township

Materials are being moved on location to start drilling on James Monroe No. 1 Ford, SE NW SE section 16-7n-16e.

Allegan County—Trowbridge Township

Indications of a new field in Allegan County came in reports that No. 1 James O. Emmons, NW NE NE section 28-1n-13w, came in with an initial flow of 200 bbls. from the Traverse structure. The well is about 10 miles south of the Salem field, and the first successful test in the Trowbridge area. It is due for acid treatment.

Permits in Eight Counties

Eight Michigan counties shared the week's list of 12 licenses for oil drilling operations. Included was one county—Calhoun—which rates as virgin territory for oil exploration. The Calhoun County permit is for a test in section 29-1s-7w, not far from Battle Creek. The permit was taken by Verona Crude Oil & Gas Co., based on hope of finding a southeasterly extension of Allegan County's Salem field.

There also were wildcat permits for Gibson Township (18n-3e) of Bay County, Holland Township (5n-15w) of Ottawa County and Port Huron Township (7n-17e) of St. Clair County. Gladwin County, as usual, dominated the list, with three permits for Buckeye Township (18n-1w) and one for Bentley Township (17n-2e).

Kansas Fields

(Continued from Page 200)

tion 35-23-14, was shot and pumped 5 bbls. of oil daily from Mississippi lime at 1,648-55 feet, total depth.

C. L. Sheedy No. 7 Lee, SE SW SW NE section 23-25-14, had spudded. Max Reynolds No. 1 Specht, C E half NW section 34-25-14, was a location.

Marion County

Harwood Oil Co. and others No. 1 Novak, NE NE SW section 28-17-4, was a recent completion in the Lost Springs area, Marion County. It had Mississippi lime at 2,427-84 feet, total depth, and produced 35 bbls. of oil daily.

Sedgwick County

Steinbuchel and associates No. 1 Werkler, NW cor. section 19-28-1e, Sedgwick County, was an abandoned location.

Continental Oil Co. No. 5 Goodrich, NW NW SW section 16-25-1e, was a rig.

Chautauqua County

Skiles and others No. 1 Miller, SE cor. section 1-33-11, Chautauqua County, was bottomed at 910 feet and produced 250,000 feet of gas, when completed recently.

Seifkin & Republic Natural Gas Co. No. 2 Burton, NE SE SW SE section 27-33-12, was dry and abandoned at 1,765 feet, total depth.

Grant County

Two gas wells were completed recently in Grant County. R. K. Wilson No. 1 Siedd Farm Corp., C SE section 11-28-38w, produced 8,000,000 feet of gas at 2,649 feet, total depth.

United Production Co. No. 1 Cummings, C SW section 25-29-35w, was bottomed at 2,717 feet and produced 3,380,000 feet of gas.

North and East Texas

By MITCHELL TUCKER

K.M.A. Definitely Extended Two Miles to the Northwest

WICHITA FALLS, Tex., Jan. 24.—The rapidly developing K.M.A. pool of southern Wichita and northern Archer counties has had several hundred more acres added to its already estimated 50,000 acres of proven territory. During the past week 21 new locations were staked while eight wells were completed for an aggregate potential of 15,134 bbls. per day. There are now 48 drilling wells and 19 in the process of completion.

The field was definitely extended 2 miles northwest last week. Joe Worsham No. 1 Waggoner Brothers, SE cor. section 13, was bailing to bottom of hole and making about 15 bbls. of oil an hour. Total depth is 3,870 feet. This well checked somewhat higher on all important markers as compared with wells in the field proper; thus throwing the entire northern part of the field open to further development.

Southwest Outpost Bailing

Geier Brothers and Jackson No. 1 Ancell, G. Roberts Survey, Abstract 795, 3½ miles southwest of production on the west side of the pool, was bailing preparatory to drilling the plug when the spudder broke down. Casing is cemented at 3,958 feet with hard saturated lime and sand reported found from 3,962 feet to 3,977 feet. Operations are suspended until the spudder is repaired.

After about 60 days in the process of completion, during which the well was both shot and acidized, Clyde Texan No. 1 A. W. Burnside, in the J. M. Sharp Survey, one of the wildcat outposts on the east side of the field, was finally completed last week for an initial production of 175 bbls. per day. In contrast to the production from this eastern edge well, Kadane-Griffith Oil Co. completed its No. 1 J. A. Kemp for 5,600 bbls. per day and their No. 2 Anne Mangold for 3,120 bbls. per day in the thick sand area on the western side of the field.

Bob Waggoner and D. Holmes of Wichita Falls staked wildcat location for their No. 1 Mrs. Ed. Waggoner, 20 miles northeast of the field. The test is in the Robert Evans Survey, Abstract 74, one-half mile west of the city limits of Wichita Falls.

Rathke Oil Co. No. 1 Burnett, extreme northwest outpost in section 4 of the H.T.&B. Survey, Abstract 752, was drilling below 3,490 feet. This well appears to be checking favorably on all important markers and should it find production from the deep sands of that area, several thousand additional acres will be added to the proven territory. Top of the K.M.A. lime should be encountered next week.

Trading in the area slowed down considerably last week pending the outcome of several of the outpost tests, however, Consolidated Oil Co. of Wichita Falls was reported to have paid $100 an acre cash for the southwest quarter of the E. B. Heath Survey, Abstract 176, from Leslie Humphrey of Wichita Falls.

Archer County

Nazro and Grubb No. 1 W. P. Ferguson, southeast corner of Block 3, F. Peterswick Survey, Abstract 243, north offset to the Norwood-Schaeffer Oil Co. No. 1 Ferguson, first producer in Archer County, was flowing approximately 30 bbls. an hour while drilling. Saturated sandy lime was found from 3,817 feet to 3,827 feet, and the oil sand topped at 3,832 feet and carried to 3,847 feet, where it was expected to go some deeper before setting casing.

Sam K. Vierson No. 1 W. P. Ferguson, southwest corner of Block 16, R. McKim Survey, northeast offset to the Nazro test, topped sand at 3,808 feet and saturated sand and lime from 3,823 feet to 3,826 feet, total depth. Operator was testing preparatory to completing.

H. A. Schaeffer No. 1 W. P. Ferguson, Block 15, McKim Survey, east offset to the Norwood-Schaeffer well, topped lime at 3,733 feet and set 7-inch casing at 3,746 feet. Operator was bailing to drill plug.

Young County

Although the James pool of eastern Young County was discovered over three years ago by Pitzer & West of Breckenridge, important extensions or many additional completions had not been made until last week. A. J. Strong of Graham is completing his No. 1 G. W. Slater, T.E.&L. Survey, flowing at the reported rate of 40 bbls. per hour after acidizing. Midway between this and the discovery well, Black Gold Oil Corp. No. 1 Shields was completed in lime from 3,810 feet to 3,893 feet and produced 620 bbls. in 24 hours on official test. Wells to the north, northwest, south and southeast are either drilling or in the process of rigging up. These recent favorable completions are expected to result in more intensive development of the James pool.

Clay County

Two 4,000-foot tests, both in search of the deep pay found in the K.M.A. pool of Wichita County, were staked last week in the northwestern part of Clay County. Deep Oil Development Co. made location for its No. 1 H. C. McClennan in the C. F. Stanley Survey, Abstract 407, and B. A. Huff staked his No. 1 Collins in the J. Tyler Survey, Abstract 568.

Jack County

Half a mile northeast, a north extension to the Bryson pool of Jack County, was seen last week in Bennett Petroleum Co. No. 1 Matlock in the B.S.&F. Survey, Abstract 78. Sand was topped at 3,090 feet, with first saturation reported at 3,105 feet. The well has drilled 12 feet into the pay, where it showed for an estimated 250 bbls. of oil daily.

EAST TEXAS FIELD

DALLAS, Tex., Jan. 24.—Five new wildcat locations were staked in East Central Texas last week, Angelina County having two and Henderson, Limestone and Navarro counties each having one.

Gar-Flo Oil Co. No. 1 J. L. Russell and Ginter Co. No. 3 Copes heirs both announced locations in the J. Morin Survey about 4 miles east of Diboi in Angelina County. Howard Petroleum Co. staked its No. 1 H. W. Barton in the A. J. Allen Survey of Henderson County. In Limestone County, J. S. Cosden, Jr., announced location for his No. 1 J. J. Bower in the J. Breeding Survey near Prairie Hill. Location for Natural Petroleum Co. No. 1 Karen Brown was staked in the W. T. Hunter Survey, 2 miles east of Roane in Navarro County.

Talco Field

The possibility of another deep exploratory test of the Lower Glen Rose at Talco was mentioned again last week. Magnolia Petroleum Co. drilled the first such test last summer on the eastern edge of the pool and found the lower horizons barren. It is now proposed by a group of local citizens and oil men in eastern Texas to reenter and deepen the temporarily abandoned well drilled by Ajo Oil Co. on the Sandes land in the C. Paine Survey about 2 miles west of Talco. This well cut the fault in the Paluxy too low to permit commercial production, but the hole is thought to have better possibilities at lower levels due to the fault strike in that direction.

Anderson County

Humble Oil & Refining Co. No. 1-C Southern Pine Lumber Co. in the Jarvis area of Anderson County was abandoned as dry last week. The well has drawn much attention for several weeks in its attempt for production from the Lower Marine Trinity. During the course of drilling many important markers were established for this area. The well topped the Pecan Gap at 3,334 feet, the Austin Chalk at 4,100 feet, the Woodbine at 4,284 feet, the Georgetown lime at 5,040 feet, the Paluxy at 6,080 feet, the Glen Rose at 6,300 feet, the anhydrite stringer at 7,400 feet, the Massive at 7,615 feet and topped the Travis Peak at 8,895 feet. It was abandoned as dry in hard sand at 9,155 feet.

Mexia Deep Test

Pure Oil Co. No. 16-T Kendricks in the P. Varella Survey of Limestone County is still testing the upper sands after plugging back from 8,847 feet several weeks ago. Casing was perforated from 5,515 feet to 5,550 feet with 18 shots, from 5,185 feet to 5,200 feet with 9 shots and from 5,145 feet to 5,160 feet with 10 shots. However, all three levels failed to show any production possibilities. Operators now intend to pull the casing and test the Woodbine sand at 5,650 feet.

Opelika Increases Production

At Opelika, in Henderson County, Seaboard-Tide Water-Humble No. 2 McElreath & Suggett, gas-distillate producer, continues to show a gain in production. Last week's gauge reported a daily yield of 390 bbls. of distillate and 9,175,000 feet of gas, as compared with 317 bbls. of distillate and an equal amount of gas for the previous week. The well is producing from 8,759 feet to 8,890 feet through perforated 8-inch casing. The distillate is being piped to the highway where it is being trucked into Tyler.

EAST CENTRAL TEXAS COMPLETIONS

Anderson County

A. McCutchins No. 1 W. B. James, 5,338-42 feet, 106 bbls. per day. Humble Oil & Refining Co. No. 1-C Southern Pine Lumber Co., dry and abandoned at 9,155 feet.

Franklin County

In the Talco pool, Humble Oil & Refining Co. No. 2 Truett, 4,128-4,308 feet, 179 bbls. per day.

Freestone County

Wheelock & Collins No. 2 Trinity Farms, 3,979-92 feet, 4 bbls. per day.

Henderson County

Roeser & Pendleton No. 8 B. H. Wathen, 4,032-40 feet, 173 bbls. per day.

Hunt County

Terola Land Corp. No. 1 Goin, dry and abandoned at 1,010 feet.

Leon County

Ogg-Merrill No. 1-B Wiley, dry and abandoned at 2,000 feet.

Titus County

In the Talco pool, Magnolia Petroleum Co. No. 16 Mainard, 4,260-4,320 feet, 295 bbls. per day. Scott Brothers No. 1-D Edwards, abandoned location.

EAST TEXAS FIELD COMPLETIONS

Gregg County—Longview Area

Arkansas Fuel Oil No. 11-B F. K. Lathrop, 3,598-3,623 feet, 64 bbls. per hour. General American No 21 M. Adams, 3,575-80 feet, 60 bbls. per hour; No. 21 J. G. McGrede, 3,612-15 feet, 80 bbls. per hour; No. 22 J. G. McGrede, 3,613-24 feet, 60 bbls. per hour; No. 16 Sheppard, junked and abandoned at 3,028 feet. Gulf

Oil Corp. No. 30 Feshburn, 3,509-20 feet, 58 bbls. per hour. Humble Oil & Refining Co. No. 9 J. M. Adams, 3,467-72 feet, 43 bbls. per hour; No. 30 T. B. and T. D. Harris, 3,455-3,519 feet, 57 bbls. per hour. Magnolia Petroleum Co. No. 22 Christian, 3,653-65 feet, 80 bbls. per hour; No. 12 C. Jones, 3,635-45 feet, 80 bbls. per hour. Stoddard & Adams No. 1 A. Bacle, 3,590-3,600 feet, 60 bbls. per hour. Midfield Oil Co. No. 9 L. Rodden, 3,585-86 feet, 30 bbls. per hour. Shell Petroleum Corp. No. 20 Slayton, 3,581-3,644 feet, 70 bbls. per hour. Sinclair Prairie No. 21 York, 3,566-70 feet, 60 bbls. per hour. Stanolind Oil & Gas Co. No. 5-B M. B. Hughey, 3,583-3,647 feet, 54 bbls. per hour; No. 7-B B. Jones, 3,597-3,674 feet, 52 bbls. per hour. Sun Oil Co. No. 15 E. C. Shoultz, 3,595-3,693 feet, 52 bbls. per hour.

Gregg County—Kilgore Area

A. F. Anding No. 3 L. P. Griffin, 3,528-32 feet, 75 bbls. per hour. Carroll & Thompson No. 2 Jerry-Rider, 3,537-40 feet, 40 bbls. per hour. T. B. Wrather No. 5 Hughey, 3,538-48 feet, 32 bbls. per hour. Magnolia Petroleum Co. No. 8 M. Andrews, 3,610-20 feet, 94 bbls. per hour. Midfield Oil Co. No. 2-A L. Martin, 3,765-66 feet, 20 bbls. per hour. H. S. Moss No. 16 F. Marshall, 3,527-30 feet, 41 bbls. per hour. J. W. Russell No. 7 R. Lacey, 3,445-53 feet, 45 bbls. per hour. Shell Petroleum Corp. No. 16 E. W. Willoughby, 3,527-90 feet, 60 bbls. per hour. Sun Oil Co. No. 15 E. S. Smith, 3,624-29 feet, 62 bbls. per hour. Sutton-Hawkins No. 10 E. Hilburn, 3,682-83 feet, 60 bbls. per hour.

Rusk County

J. F. Merrick No. 11 I.&G.N.R.R., 3,663-64 feet, 40 bbls. per hour. G. V. Allen No. 1 Alford, 3,582-3,673 feet, 25 bbls. per hour. Ambassador Oil Co. No. 13 London School, 3,757-63 feet, 70 bbls. per hour. Cook Drilling Co. No. 2-C Alford, 3,587-3,608 feet, 12 bbls. per hour. G. Despot No. 4 Deason, 3,670-3,710 feet, 55 bbls. per hour. General American No. 11 Thompson, 3,783-87 feet, 60 bbls. per hour. Great Plains Oil Co. No. 6-B S. Stone, 3,638-55 feet, 50 bbls. per hour. Humble Oil & Refining Co. No. 62 Blackwell, 3,672-74 feet, 70 bbls. per hour; No. 11 Thompson, 3,683-84 feet, 73 bbls. per hour. Ohio Oil Co. No. 24 Graham, 3,640-63 feet, 42 bbls. per hour. Okla-Texas Trust Co. No. 3 Giles, 3,668-73 feet, 40 bbls. per hour. Sun Oil Co. No. 5 L. Cooper, 3,627-37 feet, 33 bbls. per hour. Ward Oil Co. No. 36 E. S. Thrash, 3,773-3,818 feet, 53 bbls. per hour.

Upshur County

Dean & Phillips No. 2 P. Reeves, 3,712-13 feet, 30 bbls. per hour. E. P. Halliburton No. 10 Phillips, 3,672-73 feet, 82 bbls. per hour. Humble Oil & Refining Co. No. 38 Edwards, 3,665-3,714 feet, 54 bbls. per hour; No. 15-B E. O'Byrne, 3,643-56 feet, 36 bbls. Lyons & Neely No. 4 E. O'Byrne, 3,714-30 feet, 40 bbls. per hour. B. F. Phillips No. 7 C. B. Everett, 3,590-92 feet, 1½ bbls. per hour.

Smith County

A. W. Jackson No. 3 Bateman, 3,785-86 feet, 60 bbls. per hour. Toosth & Glenecov No. 9 Bateman, 3,785-85½ feet, 40 bbls. per hour.

Cherokee County—Joiner Area

Sklar Oil Co. No. 2 A. Kelly, 3,706 feet, dry and abandoned.

NORTH TEXAS COMPLETIONS

Archer County

H. H. Fraser and others No. 1 R. C. Kinder, 1,403 feet, dry. Golding & Cochran No. 1 Mrs. M. Kelly, 1,238 feet, dry. Jack Henry No. 1 J. R. Garvey, 501 feet, dry. Wayne King No. 2 D. D. Strange, 988 feet, dry. Westmount Oil Co. No. 3 T. J. Dempsey, 1,090-1,108 feet, 65 bbls. Wilson & Ligon No. 5 J. M. Powell, 2,310 feet, dry.

E. E. Butler No. 1 F. W. Pollei, 1,108-20 feet, 12 bbls. Danson Oil Co. No. 8 S. M. J. Benson A, 950 feet, dry. Fresno Oil Co. No. 1 M. P. Andrews, 948 feet, dry. A. A. Horwitz No. 7 S. M. J. Benson, 914-30 feet, 55 bbls. Bert Ligon and others No. 1 Strange, 985 feet, dry.

Baylor County

H. J. Baker No. 1 J. R. Martin, 2,602 feet, dry.

Clay County

H. H. Metzner No. 2 J. J. Taylor, 1,092-1,118 feet, 150 bbls.

Bridwell Oil Co. No. 8 H. C. Edrington A, 1,093-1,109 feet, 175 bbls. W. H. Metzner No. 3 J. J. Taylor, 1,102-15 feet, 150 bbls.

Cooke County

Kingery Brothers and others No. 1 A. Johnson, 1,185-1,200 feet, 300 bbls..

Kingery Brothers and others No. 2 A. Johnson, 1,222-35 feet, 150 bbls. E. J. Ruwaldt No. 3 G. T. Andress, 821-48 feet, 25 bbls. Seitz and others No. 1 J. D. Walker, 1,600 feet, dry. Whitfield and others No. 1 W. G. Dozier, 2,603 feet, dry.

Denton County

Bruce Lee No. 1 Boyles, 1,902 feet, dry. Wells Dodson Pearson No. 1 T. J. Ward, 2,200 feet, dry.

Foard County

O. P. Burnham No. 1 T. L. Ward, 2,370 feet, dry.

Jack County

Champlin & Bass, Inc., No. 1 S. M. Mantooth, 3,240-88 feet, 150 bbls. H. R. Edwards No. 2 Clayton, 3,030 feet, dry. York-Tex & States No. 3 J. R. and C. P. Clayton B, 2,984-3,008 feet, 50 bbls.

Hamilton Petroleum Co. No. 5 Rhodes, 2,360-2,400 feet, 250 bbls. Hanlon-Buchanan, Inc., No. 2 T. T. Bouldin, 2,703-3,000 feet, 225 bbls.; No. 6 E. M. Sampley, 2,935-70 feet. 25 bbls. Senter and others No. 1 J. W. Kinder, 2,940-3,000 feet, 120 bbls.

Montague County

Arco Oil Co. No. 15 Mrs. M. H. Salmon E, 1,595-1,610 feet, 48 bbls.; No. 16 Mrs. M. H. Salmon E, 974-95 feet, 12 bbls. O. V. Beck No. 15 Davenport, 2,390 feet, dry. Texas Northern Oil Co. No. 2 L. Keck, 803-888 feet, 50,000 feet gas.

Wichita County

Barton Brothers No. 1 J. W. Harrison, 239-45 feet, 2 bbls. Burk Royalty Co. No. I W. L. Hodges, 3,752-3,933 feet, 150 bbls. L. T. Burns No. 18 First National Co., 3,655-3,855 feet, 556 bbls. Dinsmore & Stipe No. 10 S. B. Burnett, 510-14 feet, 10 bbls. H. B. Hill No. 1 E. Birk, 525 feet, dry. King Oil Co. No. 5 W. T. Waggoner R, 1,397-1,422 feet, 40 bbls. King Oil Co. and Perkins & Cullum No. 1 Mrs. Anna Mangold, 3,679-3,725 feet, 3,592 bbls. Mogren & Anderson No. 4 K. T. Goetze, 1,540 feet, dry. Pois & Schulz No. 1 Ed Foster J, 1,247-69 feet, 115 bbls. George Proctor No. 24 Ed Foster A, 828-40 feet, 15 bbls. H. A. Schaeffer Oil Co. No. 2 First National Co., 3,655-3,835 feet, 600 bbls.

Barton Brothers No. 2 J. W. Harrison, 322 feet, dry. Blackwell Oil & Gas Co. No. 2 Hodges, 3,748-56 feet, 800 bbls. Burk Royalty Co. No. 2 Warren, 1,810 feet, dry. R. R. Clark and others No. 42 Bickley, 2,330 feet, dry. Clyde-Texan Oil Fields Co. No. 1 A. W. Burnside, 3,850-3,950 feet, 175 bbls. W. J. Dubise No. 1 W. R. Davis, 650 feet, dry. E-C Oil Co. No. 1 George F. LeBus, 3,640-3,840 feet, 732 bbls. Harbele & Thornton No. 1 Wichita Irrigation District Nos. 1 and 2, 3,665-3,770 feet, 3,250 bbls. Kadane-Griffith Oil Co. No. 1 J. A. Kemp, 3,665-3,762 feet, 5,600 bbls.; No. 2 Anna Mangold A, 3,640-3,725 feet, 3,120 bbls. King Oil Co. No. 5 Burnett B, 935 feet, dry. Manson Oil Co. No. 1 T. F. Mitchell, 3,702-3,945 feet, 750 bbls. Petroleum Production Co. No. 84 First National Bank, 3,678-3,850 feet, 707 bbls.; No. 2 First National "Bailey," 1,800 feet, dry. Pois & Schulz No. 2 Ed Foster J, 1,245-60 feet, 150 bbls.; No. 3 Ed Foster J, 900-10 feet, 100 bbls. R-G Drilling Co. No. 1 S. I. and H. M. Munger, 3,678 feet, dry. Rubsam & Hunter No. 19 W. D. McClure A, 568-89 feet, 10 bbls.

Wilbarger County

Staley Wynne & Co. No. 20 W. T. Waggoner G, 2,394-2,431 feet, 250 bbls.

Fain-McGaha and Shell No. 11 F. Fluhman, 2,050-60 feet, 20 bbls. Walter Little No. 1 A. P. Morris, 2,008 feet, dry. Paradise Oil Co. No. 1 W. T. Waggoner A, 3,025-

(Continued on Page 210)

Rocky Mountain Area

(Continued from Page 203)

Fergus County

Baughman & Singely No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 500 ft.
East Crest Oil Co. No. 1 Brakke, NW SE SW sec. 14-15n-19e. S.D. 640 ft.
White Top O. & G. Co. No. 1 Govt., C NE SW sec. 35-14n-19e. S.D. 1,450 ft.
Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 20-21n-18e. Drlg. 700 ft. in Eagle.

Glacier County

Considerable storage is being built in the Cut Bank area to take care of excess production during the winter months. Al Wilkinson is building four 5,500-bbl. tanks on his leases to store crude until the Wasatch Oil & Refining Co. plant at Pocatello, Idaho, is ready to operate. A. C. Crumley is erecting one 5,500-bbl. tank for the same purpose. A. B. Cobb and Nadeau Brothers are building an 80,000-bbl. tank at the terminal of Producers Pipe Line Co., which serves their leases.

According to Montana Oil and Mining Journal, Yale Petroleum Corp. has contracted 1,306 bbls. daily in Cut Bank for its new refinery at Kalispell and the Wasatch company 812 bbls. for its Pocatello plant, a total of 2,118 bbls. daily. There remains unsold and noncommitted oil 4,200 bbls. daily, including the production of Glacier Producing Co.

Only one well is active in Cut Bank.

A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. T.D. 2,592 ft.; S.D. until spring.
Jack Marshall No. 2 All.-119, SE SE NW sec. 1-32n-6w. Drlg. 1,975 ft.

Hill County

W. E. Drought No. 1, C SW SE sec. 12-34n-17e. M.I. mach.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-44n-15e. S.D. 1,760 ft.; C.D.

Lewis and Clark County

Lewis & Clark Oil Synd. No. 1 Lewis & Clark, NW NW SW sec. 11-18n-5w. Drlg. below 1,500 ft.

Park County

Ben W. Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. S.D. 1,250 ft.

Petroleum County

O. B. Canfield No. 2 Govt., SE SE NE sec. 21-17n-24e. Drlg. 750 ft.; set 5⅞-in. for W.S.O.

Toole County

Big West Oil Co. No. 5 Gunderson, SW NE NW sec. 19-35n-2w. Drlg. 1,270 ft.
West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW sec. 3-34n-4w. Drlg. 920 ft.
Superior Pet. Co. No. 7 Govt., NE NW NW sec. 12-35n-3w. Drlg. 1,330 ft.
R. G. Parrant No. 1 Anderson, C SW SE sec. 26-35n-4w. S.D. 90 ft.
Henry Vander Pas No. 1 Thompson, SE NW NW sec. 33-35n-3w. T.D. 1,707 ft. in top Ellis; good S.O.; will acid.
E. O. Phelps No. 1 Govt., C NE SE sec. 25-36n-3w. S.D. 10 ft. (formerly Guy Smith).
Coeur d'Alene Oil Trust No. 2 Anderson, NE SW SW sec. 8-35n-1w. Drlg. 1,470 ft.
West Kevin Community Lease, Inc. No. 1 McClary, SE NE NW sec. 3-34n-4w. Drlg. 160 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. Spdg.
Big West Oil Co. No. 7 McDonald, NW NE NE sec. 19-35n-2w. S.D. 1,617 ft.
Welch Bros. No. 2 Ward, SW SE NE sec. 29-35n-3w. S.D. 1,655 ft.
Plotke & Rader No. 11 Fryberger, NW SE SE sec. 29-35n-3w. S.D. 1,698 ft.; S.O.
Hamilton & Hamilton No. 4 Reeg, SE SW SE sec. 14-35n-2w. S.D. 450 ft.
C. T. Olen No. 7 Engemoen, C NW NW sec. 14-35n-2w. T.D. 1,607 ft.; contact 1,591 ft.
E. O. Reichoff No. 3 Baum, SW SW SE sec. 3-35n-3w. S.D. 10 ft.
Bryant Bros. No. 1 Lashbaugh, NE SW NW sec. 34-25n-2w. T.D. 850 ft.; R.U. heavier mach. to resume.

Outside Kevin-Sunburst

Montana Gas Corp. No. 2 Clark, C SE SW sec. 24-37n-1w. S.D. 1,180 ft.

Yellowstone County

Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. Top Dak. 1,800 ft.; rng. csg.
Broadview Dome Oil Co. No. 1 NE NE SW sec. 18-3n-23e. T.D. 4,147 ft.; drlg. on bridge at 2,700 ft.
Lauriel Oil Co. No. 1, C NW SW sec. 7-2s-24e. S.D. 200 ft.

UTAH

Daggett County

Mountain Fuel Supply Co. No. 3-B Murphy, NW NW SW sec. 23-3n-24e. Cmtd. 13⅜-in. at 323 ft. and S.D. for winter.
Sormir Pet. Corp. No. 1 State, SE SE NW sec. 16-3n-24e. Loc. to be drilled next spring.

Grand County

Colorado-Utah Exploration Co. No. 1 Leib-Govt., SW sec. 32-23n-21e. R.U.C.T.
Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. T.D. 6,715 ft.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. Drlg. 2,440 ft.
Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. T.D. 857 ft.; rmg. to set 12½-in.

Summit County

Longwell Pet. Co. No. 1 SE SW SE sec. 35-3n-5e. T.D. 2,502 ft. in sh.; prep. to lower 6⅝-in. for W.S.O.

NEBRASKA

Keith County

Twentieth Century Oil Co. No. 1 Stuken, C NW NW sec. 21-14n-37w. Drlg. 1,700 ft.

Jefferson County

L. R. Page et al No. 1 Bonham, C SE SE sec. 1-1n-1e. Drlg. Sil. L. 3,283 ft.; 6¼-in. at 3,197 ft.

Dawes County

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-33n-50w. Drlg. 3,005 ft. in Upper Morrison.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96. Drlg. 6,713 ft.

West, Central and Panhandle Texas

By MITCHELL TUCKER

Ector County Leads Activity; New Play in Sherman County

FORT WORTH, Tex., Jan. 24.—Previous predictions that activity in the West Texas Permian Basin would increase soon after the first of 1938 seem to have been confirmed in the number of new locations which were made throughout the territory last week. There were a total of 55 new wells announced, of which two are wildcats.

Ector County continues to lead in active work reported, with 9 wells rigging up and 75 drilling. Most of this work is in the Harper, Foster and Goldsmith fields. Barnsdall Oil Corp. let contracts for 46 wells to be drilled in 1938 on its proven properties in the Harper and Foster fields of Ector County. It also expects to develop its 160-acre lease which is proven in the Fuhrman pool of Andrews County by the drilling of eight wells. Gulf Oil Corp. is also entering the Fuhrman pool with two new locations and Fuhrman Petroleum Co. began two new wells within the proven area last week. Sixteen wells are drilling in the fast growing Wasson field of Gaines and Yoakum counties; 12 in Rotan, 20 in the Snyder field of Howard County. Gulf Oil Corp. has made 10 new locations in the prolific Hathaway field of Ward County.

Ordovician Search

While 18 wells are drilling in the basin territory with the Ordovician beds as their ultimate objective, interest continues to be centered upon two important spots in Pecos County where new pools appear to be in the making from this deeper horizon. Of the 18 Ordovician tests now drilling, three are in Edward County, two in Hudspeth County, one in El Paso, one in Tom Green, one in Presidio, one in Brewster, Crockett, Sutton and Schleicher counties, two in Crane and three in Pecos County.

Magnolia Petroleum Co.'s promising test of the Imperial area of northern Pecos County, about 12 miles east of Grand Falls, headed and made a small flow of oil while being swabbed last week. No. 1-A McKee lost swab Friday night after the well sanded up. Continued swabbing above this point resulted in the return of 40 per cent oil and 60 per cent wash water, gas increasing with each run of the swab. Finally with the swab halfway out of the hole from a run to 4,800 feet, the well headed and made a 45-minute flow, the last 15 minutes of which was into the tanks and estimated at about 5 bbls. It then bridged and died. It is thought the presence of the lost swab in the 2½-inch tubing accounts for the small flows, and operators may pull tubing to recover swab before making further production tests. Total depth is 5,294 feet, and production is coming from saturation in the Simpson sand (Middle Ordovician) from 5,271 to 5,280 feet. The 9⅝-inch casing is cemented at 5,192 feet.

Stanley A. Thompson of Fort Worth is drilling the other probable field opener in Pecos County near the center of his huge block on the Elsinor Cattle Co. ranch, about 20 miles south and 3 miles west of Fort Stockton near the center of the county. An electrical survey was made of this hole last week to its total depth of 7,128 feet. Oil and gas horizons were indicated from 7,030 to 7,080 feet, and preparations are being made to run 5-inch casing and make production tests. Some question remains as to whether this saturation is in the base of the Pennsylvanian or in the Upper Simpson, and paleontological identification will be necessary. Exact location is 3,978 feet from the north and 1,204 feet from the east line of section 53, Block D, C.G.&S.F. Survey.

Gulf Oil Corp.'s effort to extend Ordovician production 3 miles north of Sand Hills appears to be unsuccessful, as its No. 3 McKnight in section 9, Block B-21 of Public School Land, is swabbing only sulfur water from a total depth of 6,258 feet after drilling through the Simpson and into the Ellenburger.

Expanding limits of the producing areas, and completion of wells with high initials, point to increased interest and activity in the fields of the northern Permian Basin.

The Wasson-Denver field of Gaines and Yoakum counties seems to be proven over an area of about 18,000 acres after intervening tests were completed to establish the connection between the two areas, and at the present time it is one of the most active fields in West Texas, with 16 rigs running. Humble Oil & Refining Co. made its entry into the field last week by making two new locations. A. G. Carter and Continental Oil Co. added one of the field's largest producers last week in No. 4 Wasson, the same section in which the discovery well was drilled. The new well gauged 1,597 bbls. of oil in 24 hours through open 2-inch tubing, with 1,825,000 feet of gas, after acidizing with 8,000 gallons and shooting with 310 quarts. Total depth is 4,986 feet.

Gulf Oil Corp. has made a location slightly more than 1 mile west of the Denver field on the J. C. Futch lands in section 796, Block D, John H. Gibson Survey, and will be closely watched in its effort to extend productive limits of the field in that direction.

In southeastern Yoakum County the Bennett pool attracted increased attention as Texas Pacific Coal & Oil Co. completed a well there for the highest initial production for the week north of Andrews County. Its No. 3 Ruth E. Bennett gauged 1,744 bbls. daily after shooting with 620 quarts from 5,075 to 5,250 feet, total depth. In figuring official gauges for the Bennett pool, the second six-hour flow of a 12-hour test is multiplied by four.

A 2-mile outpost of the Slaughter field in southwestern Hockley County, is being watched closely in this promising new field at the extreme northern part of the basin. Sid W. Richardson No. 1 Slaughter Estate, Labour 59, League 39, Maverick County School Land, is drilling at 4,700 feet and expects to pick up the Big Lime next week. Gulf Oil Corp. is drilling two south outposts to this field.

Loving County

On the extreme western crest of the Permian Basin, Barnett Petroleum Corp. No. 1-A W. D. Johnson, section 12, Block 56, T.&P. Survey, 2 miles northwest of the Mason pool of Loving County, is making attractive showings of oil from the Delaware sand. It is heading small flows of oil, but it is not yet determined whether the appearance of sulfur water here will prevent the completion of a commercial producer.

Hathaway Area

Texas Co. made a quarter-mile extension to the west from productive limits in the Hathaway pool of Ward County in the completion of No. 1-E State, University Lands, for an initial production of 1,074 bbls. after shooting with 165 quarts, total depth 2,694 feet. Gulf Oil Corp. has recently made location for the immediate drilling of 10 new wells on their proven lands in this field. The western limits of this field seem defined, as DeLaney and others No. 1 Cooper, section 43, Block 34, H.&T.C. Survey, 3 miles from present production, was abandoned as dry at a total depth of 3,000 feet.

PANHANDLE

An intensive lease play has developed around Indian Territory Illuminating Oil Co. wildcat in Sherman County, northern part of the Panhandle, after large showings of gas were reported in its No. 1 Davis, in the southwestern corner of the county. About 20,000,000 feet of gas per day has shown in this well from the Granite Wash logged from 2,705 to 2,720 feet, present total depth. The new find is about 20 miles southwest of gas production in Moore County, and is regarded as one of the most important strikes made in several years. Prices of both royalty and acreage are advancing steadily.

Along the southern edge of the Panhandle district, Mills Bennett Petroleum Co. No. 1 Montgomery, F. J. Lathem Survey of Floyd County, is drilling below 6,550 feet in anhydrite.

Sixteen new locations were staked in the Panhandle fields last week, along with 12 new completions. Nine completions were for oil and three for gas.

WEST CENTRAL TEXAS

Developments in the Avoca area of Jones County continued to highspot the West Central Texas activity this week. Three new wildcats were announced in the county to seek the Palo Pinto lime, Canyon series pay zone of the field.

One completion, Iron Mountain Oil Co. and Humble No. 3 Jones & Stasney, gave the pool its first west extension, being a quarter mile west of the discovery well. The producer flowed 963 bbls. in six hours from natural pay at 3,184-3,200 feet.

Iron Mountain also staked location for a northwest outpost to the pool, its No. 1 Jones & Stasney, in the southeast corner of section 191, B.B.B.&C. Survey.

Humble began work on a 2½-inch gas line and a 3-inch water line to furnish fuel for rotary drilling. Two rotary machines are active in the pool.

To the northeast in Shackelford County, Owens-Snebold and others No. 1 Haterius, Palo Pinto discovery, flowed 878 bbls. of oil on a 15-hour gauge after 2,000-gallon acidization at 3,211-18 feet, but developed water again to make 49 bbls. of oil and 20 bbls. of water on the last hour of test. A second cementing job was considered. Two offsets, east and north, have spudded.

Thomas D. Humphrey's "mystery wildcat," No. 1 Alston on the Jones-Shackelford County line 4 miles north, was reported to have cemented 5-inch at 3,180 feet above the Palo Pinto after encountering a showing of oil.

Southwest of Lueders, 8 miles south of the field, Joe A. Worsham of Fort Worth and associates staked No. 1 Commons for a 3,300-foot cable-tool test.

Walter K. Jones and C. F. Wilson let contract to Sam Hodges of Abilene to drill a 3,500-foot wildcat 6 miles east of the Guitar pool, about 15 miles north of Abilene. Three miles southwest of Stamford, George Callihan of Albany was moving in rig for a contracted 4,000-foot wildcat, the B. H. Roth & Co. No. 1 O. A. Kinney and others.

A freak condition apparently gave a dry hole to Ungren & Frazier in the Hawley field's deepest pay zone, the King sand, when it drilled into water at 2,357 feet. Operators planned to plug back. No. 2-C Dorsey, deepened from the Cook sand where it had produced nearly a year, is almost midway between a King sand producer owned by N. H. Martin & Son and a new completion from the sand pay by Thomas D. Humphrey. The Humphrey well flowed 246 bbls. this week in three hours of gauge after a 2,000-gallon acid treatment at 2,324-31 feet. It is the largest of three King completions in the pool.

Acid treatment of 7,500 gallons after a 130-quart shot of nitro brought the Sunray Oil Co. No. 7 Robinson into production this week as the second Rotan field "dry hole" to make good. A northwest edge well to the Fisher County field, No. 7 Robinson was drilled to water at 3,872 feet, plugged back to 3,557 feet and treated in the regular pay zone, Noodle Creek lime, which had failed to show a rainbow. It is in section 172-2-H.&T.C. Survey.

WEST TEXAS COMPLETIONS

Andrews County

Humble Oil & Refining Co. No. 35 J. S. Means, 4,486-4,524 feet, 1,015 bbls. per day; No. 15 R. M. Means,

4,500-56 feet, 871 bbls. per day. Landreth Production Co. No. 3 Jones, 4,460-87 feet, 632 bbls. per day.

Crane County

Gulf Oil Corp. No. 14 Tubbs, 4,385-4,420 feet, 415 bbls. per day. Pitzer & West No. 1 Cordova-Union, 2,040-2,125 feet, 226 bbls. per day. J. M. Rush No. 4 Gibbs-Hughes, 2,263-98 feet, 990 bbls. per day.

Ector County

In the Foster pool, Barnsdall Oil Co. No. 7 Foster, 3,990-4,160 feet, 1,280 bbls. per day. Broderick & Calvert No. 1 Parker, 4,030-4,260 feet, 990 bbls. per day.

In the Goldsmith pool, Gulf Oil Corp. No. 61 Goldsmith, 4,124-4,224 feet, 2,580 bbls. per day. Humble Oil & Refining Co. No. 7-C Scharbauer, 4,155-94 feet, 286 bbls. per day. Shell Petroleum Co. No. 3-B Cowden, 4,100-4,294 feet, 383 bbls. per day; No. 5-B Cowden, 4,080-4,298 feet, 387 bbls. per day; No. 2-A Scharbauer, 4,172-4,217 feet, 609 bbls. per day. Texas Co. No. 1 McDonald, 3,385-3,669 feet, 984 bbls. per day. Texas Pacific Coal & Oil Co. No. 14 Scharbauer, 4,205-60 feet, 2,298 bbls. per day.

Gaines County

In the Wasson field, Carter-Continental No. 4 A. L. Wasson, 4,840-4,986 feet, 1,597 bbls. per day. Continental Oil Co. No. 1-53 A. L. Wasson, 4,825-4,996 feet, 824 bbls. per day.

Edwards County

W. F. McDermott No. 1 Lucas, 2,075-3,101 feet, dry and abandoned.

Loving County

West Tex Petroleum Co. No. 4-B Allen, 4,270-4,320 feet, 101 bbls. per day.

Pecos County

Cardinal Oil Co. No. 4-K Tippett, 325-70 feet, 6 bbls. per day. Hoss & Downey No. 1 Cordez, 1,975-2,044 feet, 175 bbls. daily by heads (recompleted).

Upton County

Cardinal Oil Co. No. 7 Wooley, 2,100-89 feet, 105 bbls. per day. No. 8 Wooley, 2,081-2,170 feet, 116 bbls. per day. Peerless Oil Co. No. 4 Shirley, 2,140-92 feet, 280 bbls. per day. Pure Oil Co. No. 8 Hughes, 2,482-2,606 feet, 510 bbls. per day. Texas Pacific No. 30-A Lane, 2,093-2,132 feet, 560 bbls. per day.

Ward County

Gulf Oil Corp. No. 72 Estes, 2,450-2,685 feet, 950 bbls. per day; No. 74 Estes, 2,447-2,682 feet, 1,016 bbls. per day; No. 75 Estes, 2,460-2,681 feet, 1,104 bbls. per day; No. 93 Hutchins, 2,441-2,550 feet, 654 bbls. per day. Hadlock & Clawson No. 1-C Cal-Allen, total depth 2,616 feet, dry and abandoned. Humble Oil & Refining Co. No. 28 Richter, 2,445-2,615 feet, 751 bbls. per day. Texas Co. No. 1-E Union, 2,400-2,694 feet, 1,074 bbls. per day. Texas Pacific No. 13 Barker, 2,250-2,407 feet, 315 bbls. per day.

Winkler County

Amerada Petroleum Co. No. 6-A Daugherty, 2,900-71 feet, 619 bbls. per day. Falcon Oil Co. No. 9 McCutcheon, 3,302-3,420 feet, 244 bbls. per day. Gulf Oil Corp. No. 25 Clapp, 2,787-3,090 feet, 580 bbls. per day. Gulf No. 23 Keystone, 3,433-3,515 feet, 472 bbls. per day. Humble Oil & Refining Co. No. 25 A. Colby, 2,778-3,086 feet, 867 bbls. per day. Magnolia Petroleum Co. No. 120 Walton, 2,830-2,938 feet, 1,889 bbls. per day; No. 121 Walton, 3,107-3,210 feet, 481 bbls. per day; No. 125 Walton, 2,824-2,950 feet, 482 bbls. per day; No. 9 Starke, 3,160-3,275 feet, 329 bbls. per day. Skelly Oil Co. No. 25 Halley, 2,724-2,891 feet, 1,520 bbls. per day.

Yoakum County

Denver Oil & Refining Co. No. 2-A Whittenburg, 4,896-5,010 feet, 461 bbls. per day. Honolulu Oil Co. No. 2 Bennett, 5,102-5,247 feet, 793 bbls. per day. Shell Petroleum Co. No. 1 Lynn, total depth 4,999 feet, 220 bbls. per day. Texas Co. No. 1 Walker, 5,010-5,180 feet, 190 bbls. per day. A. B. Swain No. 1 Jack Forth, T.E.&L. Survey 915, shallow. A. D. Stenbridge No. 1 J. B. Herrington, T.E.&L. Survey 903, shallow.

Jones County

Thomas D. Humphrey No. 5 Henry Dorsey Estate, deepened from 2,067 to 2,324-31 feet, acidized 2,000 gallons, flowed 246 bbls. in three hours through three-fourths inch choke. Condor Petroleum Co. No. 2 C. W. Logsden, abandoned dry at 2,458 feet, total depth. Condor Petroleum Co. No. 6 Clayton Holt, 10 bbls. per day at 1,905-14 feet, total depth. Petroleum Producers No. 2 Jessie S. Millsap, shot 40 quarts from 1,930-37 feet, flowed 323 bbls. in 11 hours. R. G. Trippett No. 14 Guitar Trust Estate, pumped 52 bbls. per day, acidized 2,000 gallons from 1,922 to 2,014 feet. Ungren & Frazier No. 13 Henry Dorsey Estate, 43 bbls. of oil per day, acidized 2,000 gallons from 2,150 to 2,178 feet. Iron Mountain Oil Co. and Humble No. 3 Jones & Stasney, flowed 963 bbls. in six hours from 3,184 to 3,200 feet, naturally.

Shackelford County

Sherwood B. Owens No. 14 J. P. Morris, 10 bbls. per day at 1,587-1,601 feet. Farris & Parker No. 2 W. D. Baker, abandoned dry at 1,719 feet, total depth. Union Oil & Mining Co. No. 3 Leah H. King, dry and abandoned at 537 feet, total depth. A. B. Bissey No. 1 Diller Bros., abandoned dry at 835 feet, total depth.

Callahan County

Roy Arrowood No. 3 Miller, abandoned dry at 659 feet, total depth. B. A. Wilkinson No. 1 Philley, abandoned dry at 1,952 feet, total depth. Marie Johnson No. 5 L. Williams, abandoned dry. H. A. Stebinger No. 1-A Kennard, abandoned dry at 1,608 feet, total depth. E. N. Schaffner No. 6 Boyd, 1 bbl. oil and 1 bbl. water per day at 213 feet, total depth.

Fisher County

Sunray Oil Co. No. 7 Robinson, plugged back from 3,872 feet to 3,557 feet, shot 130 quarts 3,526-57 feet, acidized 7,500 gallons 3,550-57 feet, flowed 427 bbls. per day.

PANHANDLE COMPLETIONS

Railroad Commission test for 24-hour period.

Carson County

Danciger Oil & Refining Co. No. 2 Block, 2,990-3,067 feet, 256 bbls.

Gray County

Adams & McGahay No. 8 Moore, 2,395-2,506 feet, 167 bbls. Gibson Oil Corp. No. 2 Combs Worley A, 2,887-2,960 feet, 654 bbls. S. & M. Oil Co. No. 1 P. A. Worley, 3,127-3,220 feet, 626 bbls. Watchorn Oil Co. No. 2 Saunders, 2,845-2,943 feet, 476 bbls.

Hutchinson County

Mid-States No. 16 Whittenburg A, 2,830-2,902 feet, 728 bbls. Stekoll Oil Co. No. 9 Dial, 2,872-2,980 feet, 419 bbls. Texas Co. No. 7 Quinn, 3,096-3,111 feet, 480 bbls. Phillips Petroleum Co. No. 30 Cockrell Ranch, 2,990-3,056 feet, 3,777 bbls.

Moore County

Shamrock Oil & Gas Corp. No. 10 J. T. Sneed Jr., 2,310-2,560 feet, 136,323,000 feet of gas. Sinclair Prairie and Shell No. 1 Loganecker, 3,185-3,312 feet, 16,129,000 feet of gas. Sinclair Prairie and Shell No. 1 A. P. Wilbar, 2,915-3,250 feet, 14,421,000 feet of gas.

North Louisiana Fields

(Continued from Page 195)

with 7-inch casing set at 5,193 feet and total depth of 5,209 feet.

Approximately three-quarters of a mile southwest of the field, C. R. Schuster No. 1 Sallie Lloyd, C S half SW SW section 2-20-15, has set 5½-inch casing after difficulty in conditioning the hole, and will test for a possible extension during the coming week. Total depth is 5,271 feet, and porous lime was reported cored.

In the field proper, two new wells were added. Atlantic Refining Co. No. 1-D Patton, C N half, SE SE section 29-21-4, was brought in making 56 bbls. on an hour gauge with three-quarter-inch choke. Tubing pressure was 180 pounds and casing pressure 400 pounds, with total depth at 5,247 feet. The well was acidized with 3,000 gallons.

In the Lincoln Parish section, F. H. Brown No. 1 Patton, C N half SE SW section 6-20-4, made an initial production of 65 bbls. per hour on a 1-inch choke, with tubing pressure of 100 pounds and total depth of 5,380 feet.

Sligo Gasser

In Bossier Parish, Union Production Co. brought in another large gasser when No. 1-B Kerr Unit, section 24-17-12, came in making an estimated 40,000,000 feet per day with a rock pressure of 2,065 pounds and total depth at 5,100 feet.

Lincoln Wildcat

In the southeastern corner of Lincoln Parish, a wildcat is attracting attention. The test, Oakes & Easton No. 1 Griggs, section 36-18-1w, in the Choudrant Prospect, cored porous lime at 5,939-41 feet and set 5½-inch casing at 6,121 feet. Preparations have been under way to make a production test. Perforations were shot at 5,932-41 feet and tubing run. After swabbing for several hours, the fourth run showed live oil, and fluid level in the hole is reported not lowered. Actual outcome of the test is not known, but should it be successful it may presage a development similar to Lisbon, which was discovered a little over a year ago by the same operators. In the new proration order effective February 1, Lisbon figures remained at 10,000 bbls.

Cotton Valley

The Cotton Valley field again claimed attention, with the third completion in the Holloway sand. A. G. Oliphant No. 1 Hodges, NE cor. section 34-21-10, cored the sand at 5,632-44 feet and set 9⅝-inch casing at 5,620 feet, 52 feet off bottom. The well came in making an initial production of 1,481 bbls. per day on a half-inch choke with casing and tubing pressures of 1,450 and 580 pounds, respectively. A later 12-hour gauge showed 788 bbls. on the same choke and an increased tubing pressure to 625 pounds.

The new sand producer is about a mile northeast of Ray Drilling Co. No. 1 Stewart, which several days ago made the second producer in the sand. It lies almost in line with the Ray well and Ohio Oil Co. No. 6 Holloway in section 23-21-10, which was the discovery well in the sand several months ago.

The recent development of this sand brings a problem to operators. The principal horizon of Cotton Valley is the deep Bodcaw sand occurring below 8,100 feet, for which an 80-acre spacing rule has been set. For the Holloway sand 40 acres holds as the spacing program. The shallow sand is regarded as unreliable, since offsets drilled to the Ohio discovery failed to find production. The operators are faced with drilling to the Holloway sand on a spacing rule which will allow the deepening to the Bodcaw should the more shallow horizon prove unproductive.

The Holloway sand produces high-gravity dark crude in comparison to the white oil produced with large volumes of gas in the deeper Bodcaw. Initial production in the new sand runs high, with the third well this week topping the previous two. For the present uncertainty prevails as to possibilities of immediate development of the Holloway.

In the deeper Bodcaw sand, one new producer was completed. Woodley Petroleum Co. No. 5-B Gray, section 27-21-10, came in making 528 bbls. of high-gravity distillate together with an estimated 5,000,000 feet of gas. The test was made on a five-sixteenths inch choke with tubing pressure of 2,500 pounds and casing pressure of 2,800 pounds. Total depth of the well is 8,142 feet.

Miller County, Rodessa

In the Arkansas side of the Rodessa field, two producers were brought in. McClanahan and others No. 1-C Capps, SW cor. E half W half frac. section 14-20-28, made 325 bbls. per day on a 1-inch choke with casing pressure of 250 pounds and no tubing pressure. Total depth is 6,048 feet.

Thompson & Joffra No. 1 Treadway, SE cor. NE SE NE section 10-26-28, made 80 bbls. per hour on a 22/64-inch choke with tubing pressure of 50 pounds and casing pressure of 500 pounds. Total depth is 6,145 feet.

Shuler Proration

Although no completions were made in the Shuler field, a number of tests were on the sand for early completion. A factor which will probably spur development is the recently announced proration schedule placing the allowable production per well in the Jones sand at 800 bbls. per day instead of the former 400-bbl. top in effect since the first of the year. This increase, to be granted February 1, will practically double the output, since the Jones sand is the most important from standpoint of production. The ruling came as a surprise, in view of the proration curtailment in neighboring states. The increase accompanies an increased spacing rule in the Jones horizon from 20 acres base to 40 acres.

Central West

By STAFF CORRESPONDENT

Eight New Oil Wells and 18 Locations in Central Illinois

MATTOON, Ill., Jan. 24.—Eight oil wells and one dry hole were completed in the Central Basin fields in the past week and 18 new operations started. A 756-bbl. well was the best of initial production recorded.

Completed Wells

Gordon Oil Co. abandoned the locations for Nos. 4, 7 and 8 Land Bank, in section 8-2n-8e, in the southwestern extension of the Clay City pool in Clay County.

Pure Oil Co. No. 3 Leon Clark, NE SW SE section 8-2n-8e, was good for only 46 bbls. on the pump from Dolomite at 3,023-30 feet.

In Richland County, C. P. Miller and J. A. Ake No. 1 Goede, SE cor. NW NE section 17-3n-9e, Noble pool, had pay at 2,944-47 feet, total depth 2,954 feet, and made 125 bbls. initially on a pumping test.

Johnson Drilling Co. No. 1 Brant, SE cor. NE SW NE section 17-3n-9e, with pay at 2,950-54 feet, in oolitic lime, was acidized with 4,000 gallons and flowed 587 bbls. of oil net in 24 hours.

Johnson & Anderson No. 1 Hanna Heirs, SW cor. NW NE section 17-3n-9e, swabbed and flowed 334 bbls. in 24 hours from oolitic lime at 2,946-55 feet. after a 2,000-gallon acid treatment.

W. F. Lacey No. 1 Fruth, NW cor. SE SE SE section 8-3n-9e, had pay at intervals from 2,953 to 2,966 feet. It was acidized with 2,000 gallons and pumped 35 bbls. of oil in 24 hours.

Pure Oil Co. No. 7 Palmer-Taylor, C E half NE SE section 5-3n-9e, with pays at 2,940-55 feet and 2,958-60 feet and 2,972-75 feet, total depth 3,000 feet, flowed 756 bbls. the first day and 2,171 bbls. in 72 hours.

Pure Oil Co. No. 4 J. O. Coen, NW NE NE section 4-3n-9e, had saturation at 2,984-88 feet and 3,011-18 feet, total depth 3,030 feet. It was acidized with 500 gallons and then with 2,000 gallons but made only 40-bbl. pumper.

Carter Oil Co. No. 6 Watkins, C E half SW SW section 34-4n-9e, looks dubious. It was drilled to 3,030 feet. The well had showings from 3,013 feet downward and was given a 2,000-gallon acid treatment, but only a little oil was recovered and water developed. It was plugged back to 3,000 feet where 5½-inch casing had been set, and is shut down.

DeKalb Syndicate No. 1 Daniels, SE cor. SW SW NW section 16-3n-9e, was abandoned at a total depth of 2,989 feet. It was dry all the way.

Duncan Bros. No. 2 Riggs, C E half NW SE section 27-2n-8e, had pay at 3,065-73 feet and 3,075-78 feet, total depth 3,088 feet. It was acidized with 1,500 gallons and swabbed 20 bbls. of oil and 190 bbls. of water. When put on the pump it produced 20 bbls. of oil and 190 bbls. of water, but later the quantity of water fell to 35 bbls. a day, with 20 bbls. of oil production per day.

Near Completions

Olson Drilling Co. No. 1 Irwin Estate, C N half SE NW section 12-2n-7e, Clay County, found pay at 3,060-65 feet, acidized it with 1,000 gallons and then 3,000 gallons. It swabbed and flowed 189 bbls. of oil net the first 24 hours and 162 bbls. the second day; later 132 bbls. in 16 hours and then 273 bbls. in 24 hours. It will be given a pumping test.

Shell Petroleum Corp. No. 2 Criley, NW SE NE section 2-1n-1w, Clinton County, had Benoist sand at 1,345-72 feet, total depth. It swabbed 196 bbls. of oil and 28 bbls. of salt water the first 24 hours. It will be put to pumping.

S. Hollis and others No. 1 Haarman, NW SE SW section 32-8n-6e, Effingham County, has a showing of oil and gas at 2,965-71 feet, and standard tools were being rigged up to test.

Robert E. Markham No. 1 Mitchell, SW SE SE section 18-5s-3e, Franklin County, was at a total depth of 2,946 feet. Ste. Genevieve lime was found at 2,759 feet, Rosecliare at 2,798 feet, and Fredonia at 2,811 feet. It had showings in various upper horizons.

Bur-Kan Oil Co. and others No. 1 Allen, C SW NW section 27-4n-10e, Richland County, a wildcat, swabbed and flowed by heads 88 bbls. of oil in 15 hours at a total depth of 3,045 feet. McClosky lime was topped at 3,036 feet. Testing continued.

In Wayne County, Pure Oil Co. No. 3 S. S. Gill, C W half NE SW section 27-2n-8e, had pay at intervals from 3,040 to 3,072 feet, total depth 3,080 feet. It was acidized with 1,000 gallons and later swabbed 51 bbls. of oil and 205 bbls. of salt water in 18 hours. When put on the pump it brought up 632 bbls. of water in 24 hours. Testing continued.

Pure Oil Co. has Nos. 6 and 7 Coen, in section 4-3n-9e, in pay and was testing, and Ohio Oil Co. No. 8 Arbuthnot, in section 8-3n-9e, was near completion, with pay at 2,934-51 feet.

New Operations

Eighteen operations were announced in the past week.

In Clark County, M. V. Yeager was drilling at 1,860 feet in No. 1 Robinson, SE SW NW section 17-10-11w, measuring from Indiana principal meridian.

In Bond County, C. R. Rigall and others made a location for No. 1 Neilson, NE NE NW section 32-5n-4w.

In Clinton County, Taylor Bros. were moving in rotary for No. 1 Joseph Hefter Heirs, 450 feet from E and 150 feet from S lines SE quarter section 13-1n-1w, in Centralia. Gross, Erling & Murphy are preparing to deepen No. 1 Ben E. Eversgerd, SW cor. NW SW section 22-1n-4w, from 942 feet, and were cleaning out the hole. Adams Oil & Gas Co. had rotary rigged up for No. 3 L. Schmitz, NW NE SE section 2-1n-1w.

In Clay County, Vermilion Oil Co. had cellar and pits dug for No. 1 J. B. Smith Estate, C N half NW SW NW section 20-3n-8e.

In Coles County, Stipes and others spudded No. 1 Millage, C N half NE SE section 5-11n-10e.

In Fayette County, Carter Oil Co. was building rig for No. 1 F. R. Dowe, 485 feet from N and 990 feet from W lines of SE quarter section 15-8n-3e.

In Marion County, Frank Frederick spudded No. 1 Porter Symcox, approximately SE cor. NE NE SW section 28-4n-1e.

In Wayne County, Kenova Petroleum Corp. spudded No. 1 Bright, NE NE NE section 21-1n-3e.

In Richland County, DeKalb Syndicate spudded No. 1 Shafer, C E half NE SE NE section 17-3n-9e, Noble Townsite. Johnson & Doran moved in rotary for No. 1 Bristow, C W half NW NW SE section 17-3n-9e. Pure Oil Co. made location for No. 11 J. O. Coen, C W half NW SW section 4-3n-9e. Ohio Oil Co. has rotary rigged up for No. 9 Arbuthnot, C W half SW NE section 8-3n-9e. Frank Frederick has derrick up for No. 1 Blackburn, 213 feet from N and 64 feet from W lines of SE quarter section 17-3n-9e. Pure Oil Co. made location for No. 4 C. T. Montgomery A, NW cor. NE NW NE section 17-3n-9e. Ritz Oil Co. was moving in rotary at No. 1 Paul Jenkins, SE NW NE section 17-3n-9e, on a 16-acre tract.

In Wayne County, B. C. Morrison had rotary rigged up for No. 1 Gibbs, NW NW NW section 14-1n-9e.

In White County, H. C. Hunt and others were moving in a machine to drill a 3,500-foot test, No. 1 Smith, NW SE SW section 11-5s-8e.

EASTERN KENTUCKY

ASHLAND, Ky., Jan. 24.—One gas well, two oil well completions and one dry hole are included in the drilling operation reports from the Eastern Kentucky area. One gas well is an excellent producer with 2,017,000 feet. This well, No. 556, completed by Kentucky-West Virginia Gas Co., is on the Samuel Dillon land on Ivy Creek of Levisa Fork in Floyd County and reached a total depth of 1,331 feet in Maxon. The same firm reported completion of No. 564 in the same vicinity at 1,523 feet in Red Rock. It is an oil producer with daily production not given.

South Penn Oil Co. has completed No. 98 on the Flahaven Land Co. land on Big Sinking in the Big Sinking district of Lee County at a total depth of 927 feet. It shows a daily flow of 10 bbls. In the same district, on Billie's Fork, H. C. Wiggings reports hitting a dry hole in No. 1 at 938-foot level on the Ray Smith land. Other Lee County operations, all on Billie's Fork, follow: Thomas Witmer is drilling at the 150-foot mark in No. 8 on the C. J. Tipton land. Smith & Beoum are down 575 feet in No. 1 on Fred Childers land. Fleiger Oil Co. has reached 400-foot level in No. 1 on Andrew Combs. Oakes & Barbes are at the 490-foot mark in No. 4 on the same farm.

In the Keaton district of Lawrence County, Kentucky Oil Producers are down 70 feet in No. 2 John Rose on Keaton with operations halted because of fishing.

In Floyd County, Kentucky-West Virginia Gas Co. is down 1,515 feet in Salt sand in No. 563 on H. H. Smith farm near Mouth Camp Branch of Levisa Fork. The same firm has reached 1,293 feet in No. 565 J. I. Stepp nearby with drilling continuing in White lime. The firm is idle at No. 567 M. Slone and M. D. Slone and is setting machine at No. 5233 John F. Burcheet on Cow Creek. Inland Gas Corp. is down 1,746 feet in Maxon on the J. C. Hopkins land, No. 197.

In Pike County, Inland Gas Corp. is rigging up No. 196 Helen Leslie on Levisa Fork.

In Martin County, Kentucky-West Virginia Gas Co. has reached the 2,105-foot mark in No. 560 Melissa Ward on Rockhouse Fork of Rockcastle with drilling continuing in Berea. The firm is down 865 feet in sand in No. 5232 C. W. Preece on Coldwater Fork and at the 1,055-foot mark in sand in No. 5235 and is building road to No. 5236, also on the Preece farm.

WESTERN KENTUCKY

OWENSBORO, Ky., Jan. 24.—Three companies, Cumberland Petroleum Co., Snowden-McSweeney & Elimitch Oil Co., are starting a deep test to the Corniferous sand at the intersection of their three leases, the G. H. Roberts, G. E. Fuqua and S. J. Lancaster, in Ohio County, approximately 1 mile northeast of Fordsville. There are three tests already started for the deep horizons, but all of them are temporarily shut down at very shallow depths.

Considerable new work was started in the past week in various Western Kentucky counties, but completions were few, including one oil well, four gas wells and four dry holes, an unusually poor result for a week in this region. Following are the completions and new starts:

Daviess County

Utica district: Daugherty & Ellis No. 4 C. W. Howard, Jones sand 1,054-63 feet; shot with 40 quarts; testing.

Red Hill district: Rex-Pyramid Oil Co. No. 7 M. D. Yeiser, moving in.

Habit district: Rex-Pyramid Oil Co. No. 1 John Christian, moving in.

Breckinridge County

Van Zant district: Kelly & Murphy No. 2 H. C.

Pate, drilling at 365 feet; Kentucky Natural Gas Co. No. 1 O. A. Jones, dry hole with show of gas at 600-04 feet and water at 615 feet; total depth 617 feet; Bethel sand 600-17 feet.

Cloverport district: William Rallins and others No. 1, Acos Brothers deep test, shut down at 125 feet. Flescher, Galey and others No. 3 Murray Tile Co., deep test, shut down at 120 feet.

Hancock County

Goering district: Cumberland Petroleum Co., No. 2 M. C. Reardon, 521,000 feet of gas, 131 pounds rock pressure in Jones sand; total depth 508½ feet; completed.

Weber district: Grovely Oil & Gas Co. No. 8 Ab Baker, water in Jackson sand; total depth 601 feet; abandoned.

McLean County

Maxwell district: Ellis & Huff No. 1 Mape York, stray sand 950-78 feet; oil showing in broken Jett sand from 1,125-33 feet; total depth 1,136 feet; dry and abandoned. Ellis & Huff No. 3 John Ditto, rigging up.

Buel district: J. C. Ellis No. 1 Weil Brothers, moving in.

Mulhenberg County

Greenville district: J. C. Ellis No. 4 R. O. Kennedy, drilling at 1,246 feet.

McLean County

Island district: South Penn Oil Co. No. 3 H. K. and John Kirtley, moving in.

Ohio County

Narrows district: Whitehouse Oil & Gas Co. No. 3 Joe Schultz, 199,000 feet of gas from Jackson sand at 496-521 feet; total depth 531 feet.

Fordsville district: Cumberland Petroleum Co., Snowden-McSweeney and Ellmitch Oil Co., joint line deep test well No. 1 on line of G. H. Roberts, G. E. Fuqua and S. J. Lancaster lands, spudding in. Snowden-McSweeney No. 21 J. W. Peckinpaugh, 250,000 feet of gas, 22 feet of Jett sand, core drilled. To be used as combination gas and key well.

Friendship Church district: A. Teller and others No. 11 A. A. Whitehouse, 20 bbls., Barlow sand 719-33 feet; shot with 60 quarts. A. Teller and others No. 2 A. H. Medcalf, moving in.

Adaburg district: Rex-Pyramid Oil Co. No. 16 J. Len Stinnett, drilling at 300 feet.

Sunnydale district: Western Kentucky Petroleum Corp. No. 2 F. M. Moseley, drilling at 150 feet.

Dundee district: New Deal Oil & Gas Co. No. 13 H. J. O'Dell, drilling at 140 feet.

Buford district: J. H. Wilson and others No. 4 N. C. Hudson, rigging up.

Beda district: Sunflower Oil & Gas Co. No. 1 C. O. Cooper, light show of oil and salt water in Bethel sand.

East Livermore district: The Petroleum Co. and Ellis No. 1 L. C. Porter, drilled 162 feet into Mississippi lime, Bethel sand 1,345-58 feet, with an oil showing; total depth 1,593 feet; dry and abandoned. W. W. Damron No. 3 Mary T. Logan, drilling at 560 feet.

Webster County

Sebree district: Powell & Garrison No. 1 Edwards estate, 134,000 feet of gas; total depth 815 feet; completed. I. B. Browning and others No. 1 J. R. Ramsey, deep test, shut down at 300 feet.

OHIO

FINDLAY, Ohio, Jan. 24.—Considerable excitement has been created in central Ohio by the completion of an 8,000,000-foot gas well in Tuscarawas County by the Brendal Producing Co. on the Robinson Clay Products Co. tract in section 17, Lawrence Township. The well made 1,150,000 naturally, from the Clinton sand at 4,689-4,717. The pay was shot with 70 quarts increasing the open flow to over 11,000,000 feet which blew down to 8,000,000 feet by the time the well was tubed and shut in. Other completions of the week follow:

In Athens Co. Canaan Township, C. W. Nuzum No. 1 T. O. Kincade, NE quarter section 7, made 130,000 feet of gas from the second Berea at 1,476-92 feet. In Bern Township, J. V. Bowman No. 3 Oliver Edgerton, section 24, was dry in the Maxon sand at 970-77 feet.

In Ashland County, Hanover Township, Mehowa Oil & Gas Co. No. 1 Dr. Burnsides, section 14, is good for 768,000 feet of gas from Clinton sand at 2,944-58 feet.

In Belmont County, Meade Township, Natural Gas Co. of West Virginia No. 2 R. G. Toothman, section 31, made 193,000 feet of gas from the Maxon and Berea sands. Total depth was 1,500 feet. In Richland Township, Natural Gas of West Virginia No. 1 Alexander McFetridge, section 25, produced 122,000 feet of gas from the Little Dunkard sand. Total depth 721 feet. In Richland Township, Union Gasoline & Oil Corp. No. 2 Fred Kurth, section 26, was dry in the Berea at 1,674-96 feet. In Richland Township, Tom Reese and others No. 2 Sarah J. Dutton, section 31, produced 85,000 feet of gas and 5 bbls. of oil the first 24 hours from Berea sand, total depth 1,885 feet. In Richland Township, Barnesville Development Co. No. 1 Valentine Atrivnyak, section 32, was dry in the Berea sand, total depth 1,984 feet.

Cuyahoga County, Dover Township, Harry Dempsey No. 1 Jan Realty Co., Lot 89, is good for 160,000 feet of gas in the Clinton sand at 2,436-54 feet.

In Guernsey County, Washington Township, Jewell Oil & Gas Co. No. 2 William Davidson, section 8, made 305,000 feet of gas from the Berea at 1,543-49 feet.

In Hocking County, Benton Township, Dowler Oil & Gas Corp. No. 1 Eli Watts, section 13, is a 35,000-foot gas well from the Clinton at 2,489-2,516 feet.

In Medina County, Chatham Township, Edson & Son No. 39 W. M. Ripley, Lot 1, Tract 13, pumped 5 bbls. of oil the first 24 hours from the Berea at 408-40 feet.

In Meigs County, Rutland Township, McKnight and others No. 1 R. M. First, section 4, started off with 95,000 feet of gas from the Maxon from 833-70 feet. In Rutland Township, John Mayer and others No. 2 Electa Souders, section 16, had a hole full of water in the Maxon at 807-29 feet and was plugged. In Salisbury Township, A. N. Bengel No. 1 Richard Williamson, Fraction 31, found the first Berea dry at 1,495-1,522 feet, abandoned.

In Monroe County, Benton Township, Jims Run Oil & Gas Co. No. 1 David McCutchison, section 5, is good for 681,000 feet of gas from the third Salt sand at 1,546-60 feet. In Wayne Township, Richfork Oil Co. No. 1 G. W. Hartshorn, section 19, made 130,000 feet of gas from the second Salt sand and the Keener sand, total depth 1,341 feet.

In Muskingum County, Union Township, Atha Realty Co. No. 1 David M. Dailey, section 16, made 8 bbls. of oil and 25,000 feet of gas from the Oriskany sand at 3,147-54 feet.

In Noble County, Beaver Township, George P. Wasmuth No. 1 Jeanette Pfeffer, section 4, is good for a small Berea gas well at 1,479-90 feet.

In Summit County, Green Township, East Ohio Gas Co. No. 1 Mary Caston, section 33, made 2,500,000 feet of gas from the Clinton sand at 4,265-88 feet.

In Washington County, Ludlow Township, Hall & Henning No. 4 J. S. McKee, section 32, had 152,000 feet of gas in the third Salt sand at 1,165-85 feet.

Gulf Coast Fields

(Continued from Page 196)

Refining Co. is moving in material for its fourth attempt, No. 1 Boyd Finch, section 22-10s-1e. It is about a mile north of No. 1 American Rice Milling Co., a dry hole which logged some interesting showings. In St. Bernard Parish, Gulf Oil Corp. staked location for No. 3 State in section 8-12s-15e. In the Hester area, St. James Parish, Continental Oil Co. is building road for No. 1 Realty Operators, 600 feet north of the north bank of the Mississippi in section 16-12s-53e. In St. Martin Parish, Carter and Stewart has rig up for No. 2 J. Martin in section 32-9s-7e.

Continental Oil Co. No. 1 Faye, a wildcat in Jefferson Davis Parish which blew out last week, has been abandoned at 10,935 feet. The well blew out from this depth while a core was being pulled, causing a small crater under the derrick floor which made it necessary to abandon the hole. It is in section 31-10s-3w.

Villa Platte Field

In the Villa Platte field, Evangeline Parish, Continental Oil Co. No. 1 Louisiana Central Land & Improvement Co., 1½ miles southwest of the discovery well in section 46-3s-2e, is drilling in shale below 8,400 feet. Broken shows of oil were logged in the Cockfield topped at 7,797 feet. Based on geological markers, the well is checking about 70 feet lower.

Amerada Petroleum Corp. No. 1 St. Charles Land Co., several hundred feet west of the discovery of the Bayou Des Allemands field, St. Charles Parish, tested salt water on two drill stem tests through perforated casing at 6,923-26½ feet and from 6,928-30½ feet. The perforations have been squeezed off and the casing will be reperforated.

In the Bayou Blue field, Iberville Parish, Humble Oil & Refining Co. has apparently opened a deep sand as casing is being cemented for a production test in No. 1 Schwing, section 67-9s-11e. The sand section was topped at 6,827 feet and the hole is bottomed in sand at 6,829 feet. No drill stem test was attempted due to a crooked hole. All commercial production has been developed at comparatively shallow depths.

COMPLETIONS—TEXAS COAST

Completions of the week with pay sand record, total depth, and initial 24-hour production follow:

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 19-X J. J. Clark, 7,112 feet, 464 bbls., quarter-inch choke.

Brazoria County

Hastings field: Humble Oil & Refining Co. No. 7 D. W. F. Beers, 6,080 feet, 586 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 5 W. G. McDeed, 6,808 feet, 620 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 15 Shaw, 6,080 feet, perforated 6,036-76 feet, 695 bbls., quarter-inch choke. Sam E. Wilson No. 1 E. D. Mills, 6,521 feet, abandoned. Manvel field: Texas Co. No. 26-B Belcher, 5,145 feet, 385 bbls., quarter-inch choke. Old Ocean field: Harrison & Abercrombie No. 2 Armstrong, 10,856 feet, perforated 10,056-66 feet and 9,900-10,000 feet, 498 bbls., various chokes.

Galveston County

Dickinson field: Kenben Oil Co. No. 6 M. Stewart, 8,936 feet, perforated casing 8,916-32 feet, 633 bbls., quarter-inch choke. Pure Oil Co. No. 2 Sam Levine, 8,111 feet, 701 bbls., quarter-inch choke.

Hardin County

Silsbee field: Republic Production Co. No. 1 Charles Howell, 6,860 feet, 443 bbls., quarter-inch choke.

Harris County

Pierce Junction field: Hamil & Smith No. 4 Prudential Investment Co., 4,804 feet, 384 bbls., quarter-inch choke. Tomball field: Amerada Petroleum Corp.-Stanolind Oil & Gas Co. No. 1-C S. Jergens, 5,597 feet, perforated casing 5,592-94 feet, 442 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 1-B L. T. Norwell, 5,586 feet, 464 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 1 Dooley, 5,570 feet, perforated casing 5,558-65 feet, 451 bbls., quarter-inch choke.

Jefferson County

Spindletop field: Stanolind Oil & Gas Co. No. 100 Gladys City, 3,710 feet, perforated casing 3,040-70 feet, 397 bbls., quarter-inch choke.

Liberty County

Hardin field: Humble Oil & Refining Co. No. 2 Myrtle Chambers, 7,580 feet, 661 bbls., quarter-inch choke.

Matagorda County

Markham field: Hamill & Hamill No. 1 Myers, 4,644 feet, abandoned.

Wharton County

Texas Co. No. 12 Pierce Estate, 5,549 feet, 151 bbls., 13 hours, three-sixteenths inch choke. Pickett Ridge field: Great Plains Oil Co. No. 1 Bishkin and Meyers, 4,748 feet, perforated casing 4,579-85 feet, one-eighth inch choke.

East Texas Fields

(Continued from Page 206)

30 feet, 600 bbls. Phillips Petroleum Co. No. 1 H. C. Shive, 2,167-85 feet, 125 bbls.; No. 200 Waggoner Ranch. 3,026-32 feet, 800 bbls.

Young County

Block Gold Oil Corp. No. 1 F. F. Shields and others, 3,810-93 feet, 620 bbls. J. J. Eagan No. 1 A. T. Dashe, 1,118 feet, dry. Lupton & McLester No. 4 Medlin heirs, 3,640-4,095 feet, 800 bbls. W. A. Scarbrough No. 1 H. M. McBrayer, 757 feet, dry. Womac Oil Co. No. 1 Mrs. M. D. Peters, 762 feet, dry.

C. E. Beavers and others No. 2 Cooper, 1,216 feet, dry. Chambers & Humphrey No. 8 S. M. J. Benson, 889-925 feet, 25 bbls. W. F. Collins No. 2 L. D. Box, 610 feet, dry. B. C. Gilmore No. 2 Speer, 665 feet, dry. S. D. Glover No. 4 Henning, 870 feet, junked. T. D. Humphrey No. 1 B. Peters, 3,826-3,938 feet, 2,800 bbls. Wooten & Wilson No. 1 W. I. Tidwell, 745 feet, dry.

Oklahoma Operations

By
DAL DALRYMPLE

Well on West Side of Cement Field Flows 3,500 Barrels Oil

The fast spreading Cement field of Caddo County held the center of the stage in Oklahoma the past week, with a 3,500-bbl. producer coming as a climax to a drilling campaign that has been increasing in recent weeks.

The big well was the Ray Stephens, Inc., No. 2 Griffin, SE NE SE section 27-6-10w, on the west side of the pool and about 7 miles south of Anadarko. It proved big production for the area in sand at 4,348-62 feet. On initial 24-hour open flow test it produced 3,505 bbls. of oil and 15,500,000 feet of gas. The following day it produced 1,768 bbls. of oil through 1-inch choke, and on the third day flowed 1,450 bbls. of oil through three-fourths inch choke. Testing was continuing to determine best gas-oil ratio. Anderson-Prichard Oil Corp. was taking the oil to its nearby refinery at Cyril.

Another oil well was near completion on the east side of the field at Magnolia Petroleum Co. No. 7 Hedlund, NE SE NE section 11-5-9w. It flowed 110 bbls. of oil in four hours with 3,000,000 feet of gas through tubing, at 3,872 feet, total depth.

Hollenback & Burton No. 1 Clark, NW cor. section 34-21-6w, wildcat near Waukomis, Garfield County, had stains of oil and an odor of gas in a core at 7,267-72 feet in sandy Dolomite, the lower part of the core showing good porosity and predominance of sand grains. Another core was to be taken. Some geologists thought top of second Wilcox sand had been found at about 7,269 feet, but others await further developments before committing themselves.

Stanolind Oil & Gas Co. and associates staked location for No. 1 Strader, NW NW NE section 8-13-3e, community test on a seismograph high southwest of Chandler in Lincoln County, and were due to start work right away.

Seminole County

W. C. McBride, Inc. No. 1-A Boy Scouts, SE cor. section 7-9-7, East Seminole area, Seminole County, had Gilcrease sand at 3,476 feet, total depth 3,491 feet, was shot and swabbed 100 bbls. of oil in 24 hours, completed.

J. J. Deaner No. 1 Snider, NE cor. section 5-6-6, Dora pool, had Boggy sand at 2,816 feet, total depth 2,891 feet, and flowed 165 bbls. of oil through tubing in 24 hours after shooting.

W. B. Pine No. 5 Williams, NW NE NE section 22-6-6, Traugh pool, flowed 110 bbls. of oil with 1,500,000 feet of gas in 24 hours, from Boggy sand topped at 2,323 feet, total depth 2,348 feet.

Malarnee & Shelton No. 4 Flowers, SW SW SE section 29-7-6, an old well, pumped 40 bbls. of oil in 24 hours after deepening from 2,921 feet to 2,946 feet.

J. F. Smith No. 1 Harryman, NE SW SW section 33-7-6, an old well, was deepened from 2,860 feet to 2,893 feet and flowed 355 bbls. of oil through casing in 24 hours.

First reports of new activity in Seminole County: Sinclair Prairie Oil Co. No. 4 Stubbs, NE cor. section 18-9-7, East Seminole area, building rig; Atlantic Refining Co. No. 2 West Tillman, NE SE NW section 2-10-5, North Earlsboro pool, rigging up rotary; Sinclair Prairie Oil Co. No. 2 Miles, SE NE SE section 29-10-8, South Cromwell area, location; Magnolia Petroleum Co. No. 1 Carliner, NW NE SE section 27-8-8, Wewoka district, an old well, rigging up to deepen; Vierson Oil & Gas Co. No. 1 Community, SE NW SW section 25-5-7, Allen pool, building rig; Hall-Troup & Moore No. 1-A Brinlee, SW SW NE section 27-6-5, wildcat, cellar and pits; Francis Oil & Gas Co. No. 1 Harris, NW cor. section 4-6-6, Dora pool, moving in rotary; Atlantic Refining Co. No. 1 Bowles, NE NW NW section 22-6-6, Traugh pool, rig on ground; J. F. Smith No. 2 Huddleston, NE NE NW section 32-7-6, Dora pool, an old well, drilling deeper; J. F. Smith and others No. 4 Harryman, NW SE SW section 33-7-6, spudded.

Pontotoc County

Continental Oil Co. No. 4 Thompson, C E half NW SW section 1-1n-7, Jesse area, Pontotoc County, was acidized and flowed 250 bbls. of oil in 14 hours, with 2,000,000 feet of gas. Top of Hunton lime was 3,850 feet, total depth 4,141 feet.

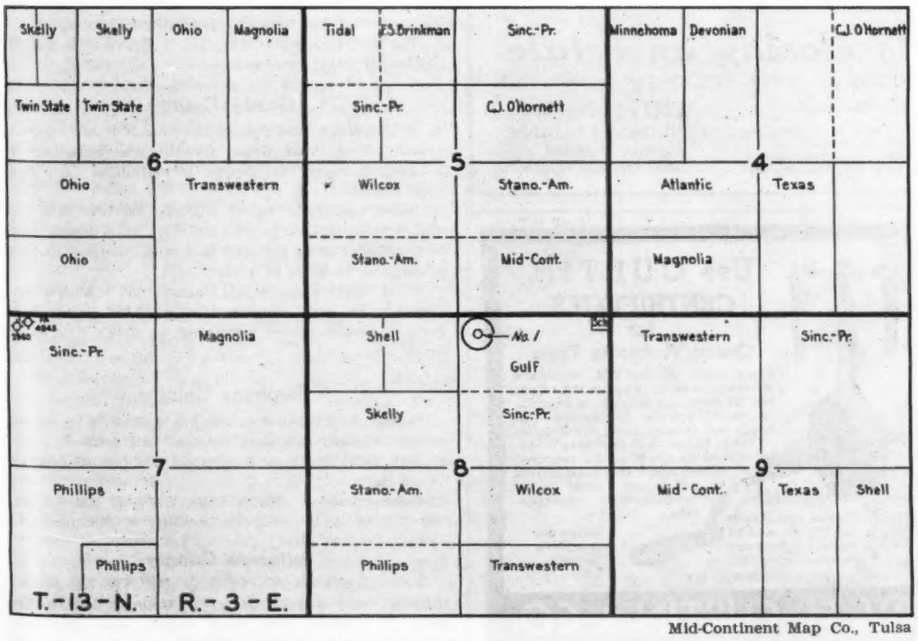
Same company's No. 3 Thompson, C E half SW NE section 2-1n-7, was completed as a Hunton lime well at 4,172 feet, total depth. After acidizing, it flowed 837 bbls. of oil gross through tubing in 5½ hours, and later flowed 543 bbls. of oil in 4 hours, with 2,000,000 feet of gas.

In the Fitts field, Magnolia Petroleum Co. No. 6 Norris, NW SE NE section 21-2n-7, had Hunton lime at 3,796 feet, total depth 3,804 feet, and swabbed and flowed 102 bbls. of oil in 12 hours.

E. H. Moore No. 12 Schauers, SE NE NW section 29-2n-7, an old well, bottomed at 3,748 feet, perforated casing between 2,570 and 2,690 feet, and pumped 52 bbls. of oil in 15 hours, pumping off.

Lester King and others No. 1 fee, NW SE SW section 11-4-6, Ada district, had gas sand at 736 feet, total depth 1,036 feet, plugged back to 742 feet and produced 3,000,000 feet of gas, completed.

New work in Pontotoc County: Benedum & Trees No. 6 Malloy, SW SE SW section 30-5-5, Beebe pool, drilling at 1,610 feet; Texas Pacific Coal & Oil Co. No. 4 Hatcher, SE NE NW section 30-5-5, an old well, rigging up rotary to deepen; C. & D. Drilling Co. No. 1 Brown, SW SW NE section 27-5-6, Conservation pool, old well being deepened, drilling at 1,842 feet; Barbara Oil Co. No. 5 Chapman, NE NE NW section 36-5-7, derrick; Lake Oil Co. No. 1 Neal, NW NW SW section 25-5-4, cellar and pits; F. W. Merrick No. 3 Bolthrop, SE NE SE section 10-4-6, spudded; same operator's No. 2 Bolthrop, NE SE NE SE section 10-4-6, waiting on rig; Sinclair Prairie Oil Co. No. 23 Woolley, SW cor. section 22-2n-7, old well, plugging back; Carter Oil Co. No. 12 Smith, NE NE SW section 28-2n-7, old well, plugging back; J. E. Crosbie No. 2-B Harden, NW SW NE section 30-2n-7, old well, plugging back.



Mid-Continent Map Co., Tulsa

Stanolind Oil & Gas Co. and others No. 1 Strader, section 8-13-3e, is location for a wildcat community test on seismograph high in Lincoln County

Lincoln County

Sun Oil Co. No. 5 Arinwine, NW SE SE section 35-15-2e, North Wellston pool, Lincoln County, found Wilcox sand at 5,123 feet, was bottomed at 5,133 feet and made potential of 631 bbls. of 41.6-gravity oil, through tubing.

Magnolia Petroleum Co. No. 5 Ross, SE SW SE section 2-14-3e, Chandler district, an old well, was plugged back from 4,986 feet to 4,235 feet and pumped 30 bbls. of oil daily from Skinner sand.

Black Gold Oil Co. No. 1-A Washam, NE SW NE section 35-13-5, Wilzetta pool, was reaming at 675 feet, total depth. Mudge Oil Co. No. 1 Robertson, SE NE SW section 10-14-6, was digging cellar and pits; Wilcox Oil & Gas Co. No. 1 DeLozier, SE SE SW section 10-14-6, was a rig; same company's No. 8 Sac & Fox, NE NW SW section 15-14-6, was rigging up standard tools at 2,929 feet, total depth.

Oklahoma County

Champlin Refining Co. No. 1 McFall, NW SE NE section 35-12-3w, Oklahoma City field, Oklahoma County, topped Hammer Handle sand at 6,210 feet, Johnson sand 6,340 feet, was bottomed at 6,400 feet, and flowed 1,193 bbls. of oil in 24 hours on gas lift.

Coline Oil Co. No. 12 Olds, SE SE NW section 24-11-3w, was drilling at 1,375 feet. Prairie Oil Co. No. 1 West, NW SE SW section 15-12-3w, had dug cellar and pits.

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp. No. 1-A Harbison NW NW SW section 22-23-2w, Billings pool, Noble County, found Wilcox sand at 4,275 feet,

was bottomed at 4,316 feet, and flowed 1,008 bbls. of oil in 6 hours, making potential of 4,046 bbls. Gas measured 5,000,000 feet daily.

W. O. Roberts and others No. 1 Dentley, NE NE NW section 6-20-2w, North Lucien pool, had dug cellar and pits.

Kay County

Shell Petroleum Corp. and Continental Oil Co. No. 5 Horn, SE SE NW section 8-28-1w, Braman area, Kay County, flowed 289 bbls. of 42-gravity oil in 24 hours and was completed at 3,532 feet, total depth. Top of Wilcox sand was 3,514 feet.

Payne County

Deep Rock Oil Corp. No. 1-A Liston, C NW NW section 26-18-3e, Mehan area, Payne County, topped sand at 1,559 feet, had a hole full of water at 1,565 feet, total depth, and was abandoned.

Sun Oil Co. No. 2 Kolb, NW NE SW section 5-19-5, Garr area, was rigging up rotary.

Hughes County

Myers Drilling Co. and others No. 1 Meadors, SE SE NE section 33-9-9, Hughes County, had Cromwell sand at 3,289 feet, total depth 3,380 feet, plugged back to 3,333 feet and produced 84 bbls. of oil and 9,000,000 feet of gas in 24 hours.

Phillips Petroleum Co. No. 2 Emma, SE NW NW section 8-6-8, Sasakwa area, an old well, was plugged back from 4,154 feet to 4,151 feet, acidized and was being put on the pump.

Pottawatomie County

Smith & Paul Brooks No. 2 Hathcock, SE SW SE section 14-7-4, St. Louis district, Pottawatomie County, found Calvin sand at 3,158 feet, was bottomed at 3,160 feet, and flowed 197 bbls. of oil in 21 hours through casing.

Sinclair Prairie Oil Co. No. 6 O-Kitchee, NE NW SW section 19-7-5, an old well, was deepened from 4,012 feet to 4,306 feet in Dolomite, acidized and pumped 65 bbls. of oil in 11 hours.

New activity in Pottawatomie County: Lightning Torp. Co. No. 1 Hines, NE SW SW section 17-7-4, an old well, was being deepened; Magnolia Petroleum Co. No. 2 Candle, SW NW SW section 13-7-4, an old well, plugged back and was testing; same company's No. 5 Banta, SW SE SE section 14-7-4, cellar and pits; Phillips Petroleum Co. No. 2 Mah-The-Was, NE NE SE section 30-7-5, rigging up rotary; Southwest Petroleum Co. No. 3 Gunter, NE NE SW section 32-11-4, cellar and pits.

Creek County

Sooner Oil & Gas Co. No. 2 Wilkerson, NW SE SE section 17-16-11, Creek County, had Dutcher sand at 2,361-95 feet, total depth, and was dry and abandoned.

Tide Water Associated Oil Co. No. 17 Richards, C NE SW section 4-17-7, an old well, plugged back and was running tubing. Pure Oil Co. No. 1 Brown, NE NE SW section 9-17-7, an old well, was cleaning out deepening from 2,746 feet to 2,769 feet. Alma Petroleum Co. and Peru Oil Co. No. 2 Jacobs, NE SE NE section 12-17-7, had dug cellar and pits. O. M. Ireland No. 4-A Bear, C W half NW SW section 11-17-10, was drilling at 1,500 feet. Johnson Oil Refining Co. No. 8 Evans, SE SE NW section 29-19-9, was bottomed at 2,395 feet, plugged back to 2,238 feet and was to cement 6-inch casing.

Osage and Pawnee Counties

New work in Osage County: Oklahoma Natural Gas Co. No. 1949 Osage, NW NW SW section 17-20-12, location; Gilmort Oil Co. No. 31 Osage, SE NE SE section 23-20-11, an old well, rigging up to deepen; Midco Oil Corp. No. 7 Osage, SW NW SW section 17-22-10, spudded.

New activity in Pawnee County: J. V. Dunbar No. 1 Gibbins, SW cor. section 8-20-9, shut down at 1,430 feet; L. F. Ice No. 1 Applegate, SW SW NW section 34-20-9, drilling at 1,800 feet; P. Adamson, Jr., No. 10 Thomas, NW SE NW section 25-21-8, total depth 542 feet, running 8-inch casing.

Okmulgee County

L. C. Butler No. 1-B McKinney, SE NW SE section 3-14-14, Okmulgee County, had Booch sand at 1,164 feet, total depth 1,199 feet, was shot and pumped 25 bbls. of oil in 24 hours.

R. H. Ford No. 15 Adams, SW SE NW section 6-14-12, was dry and abandoned in sand at 1,199-1,237 feet, total depth.

Hollifield & Howard No. 1-A Glenn, NE SW SE section 14-14-12, had Booch sand at 1,606-16 feet, total depth 1,712 feet, and produced 1,250,000 feet of gas.

Clyde S. Miller No. 1 Marshall, NE NE NW section 28-15-12, was a location. L. Smith No. 1-A Warwick, NE SW NE section 1-14-12, was a location. B. H. Young, trustee, SW NW SE section 5-15-14, had machine on ground. Texas Co. No. 10 Jefferson, SW section 22-15-14, an old well being deepened, was drilling at 2,385 feet.

Muskogee County

Taylor & Geiger No. 2-B Barnett, NW NW NE section 8-15-15, Muskogee County, had sand at 1,151-56 feet, total depth, and produced 1,100,000 feet of gas.

Wagoner County

Sands Petroleum Corp. No. 1 Okemah, SW SE NW NE section 22-17-16, Wagoner County, was a location. Wright & Kunkel No. 6 Oliver, C NW SW section 3-16-15, had spudded.

Okfuskee County

Grimes & Neil No. 3 Alexander, NW NE NE section 35-11-9, Okfuskee County, had sand at 1,478-99 feet, total depth, and swabbed 8 bbls. of oil.

Price & Anderson No. 2-A Radford, NW SW SE section 35-11-11, was dry and abandoned at 1,713 feet, total depth.

H. W. Jones No. 1 fee, NW NE NW section 13-13-8, was a location.

Carter County

Gulf Oil Corp. No. 1 Johnson, C SW NW section 27-2s-3w, was the third deep test to be completed in the Fox field, Carter County. It had oolitic lime at 7,845-7,970 feet, total depth, and flowed 3,430 bbls. of oil, with 8,800,000 feet of gas, in 24 hours. Gravity of the oil was 41 degrees. Refusing to produce on early tests, the big production came after it had been acidized with 41,000 gallons. Casing pressure was 2,600 pounds, tubing pressure 750 pounds.

Maxine Oil Co. No. 6 Eaves, NE NW SE section 5-2s-3w, was dry and abandoned at 1,985 feet, total depth.

Caddo County

Ray Stephens No. 1 Funk, SW SW SE section 1-5n-9w, Cement field, Caddo County, had sand at 5,081-5,107 feet, total depth, and flowed 442 bbls. of oil in the first 24 hours. After completion it averaged 165 bbls. of oil daily, pumping from Deese formation.

Darby Petroleum Corp. No. 1 Roose, NE SE SE section 27-6-10w, was a location.

Grady County

T. H. McCasland No. 2 Horton, NW cor. section 8-3n-5w, Knox area, Grady County, was completed as a 10-bbl. pumper in Pontotoc formation at 1,490 feet, total depth.

Same operator's No. 3 Horton, SE NW NW section 8-3n-5w, had sand at 1,860 feet, total depth 1,883 feet, plugged back to 1,880 feet, and pumped 10 bbls. of oil and 20 bbls. of water.

T. H. McCasland No. 4 Horton, NE NW NW section 8-3n-5w, was completed as a 70-bbl. pumper in Pontotoc sand series beginning at 2,423 feet, total depth 2,822 feet.

Stephens County

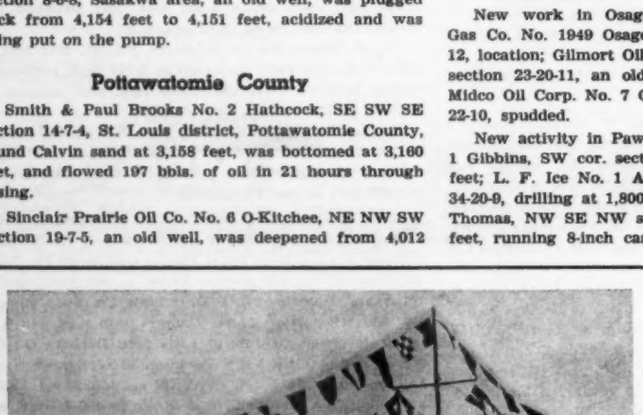
George L. Pace and others No. 5 Pitts. NW NE SE section 3-2s-8w, Stephens County, had sand at 1,539-59 feet, total depth, and pumped 10 bbls. of 34-gravity oil daily.

Same operators' No. 6 Pitts, SW NE NE SE section 3-2s-8w, twin well, was drilling at 800 feet.

Jefferson County

Bridwell Oil Co. No. 12 Seay, NE NW NE section 10-7s-5w, Seay district, Jefferson County, had Hoxbar sand at 1,228-40 feet, total depth, was shot and pumped 41 bbls. of 36-gravity oil daily.

O. E. Teagarden No. 1 Penniston, in the Red River bed south of SW cor. section 16-7s-5w, had Hoxbar



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sand at 786-98 feet, total depth, and was completed as an 8-bbl. pumper.

First Reports

Jim Turner and others No. 1-A Collins, SW NE NE section 18-4s-10w, had erected derrick for a 1,300-foot wildcat test in Cotton County.

In Tillman County, Cockburn & Baise No. 1-A Nicholas, SE cor. section 28-2s-19w, an old wildcat, was rigging up rotary to deepen from 3,022 feet. Gibson & Jennings No. 1 Burleson, SE SE SW section 35-2s-19w, was location for a 3,500-foot wildcat test. F. B. Schoonover No. 1 Loftis, NW NW SE section 19-2s-18w, was location for a 3,500-foot wildcat test.

Estimated Daily Production

Estimated daily production of Oklahoma for the week ending January 22, and for the preceding week was as follows:

	Barrels	
	Jan. 22	Jan. 15
Allen	5,825	5,800
Billings	7,800	7,400
Burbank	7,675	7,725
South Burbank	13,500	13,225
Balance Osage	20,250	19,750
Blackwell district	5,400	5,300
Bristow-Slick	6,925	7,025
Chandler	2,375	2,475
Crescent	7,600	7,750
Cromwell	3,325	3,350
Cushing-Shamrock	10,750	10,600
Duncan district	3,875	4,075
Edmond	8,975	8,900
Fish	4,325	4,300
Fitts	71,325	73,925
Jesse	4,575	3,900
Graham	4,500	4,250
Gray	1,225	1,225
Healdton	9,400	9,425
Hewitt	4,125	4,175
Holdenville	825	825
Keokuk	8,425	7,200
Konawa	1,500	1,550
Lucien	11,600	11,250
Moore	9,675	9,500
Oklahoma City	119,950	121,950
Olympic	6,650	6,725
Polo	750	775
Sasakwa and townsite	2,425	2,525
Sholem-Alechem	2,925	3,000
Seminole County:		
Bowlegs	10,300	10,350
Carr City	4,675	4,425
Earlsboro	5,750	5,625
South Earlsboro	675	650
East Earlsboro	6,400	6,450
Little River	9,450	9,125
East Little River	1,050	1,050
Maud	750	600
Mission	1,850	1,875
Seminole	8,625	8,525
East Seminole	1,900	1,925
Searight	3,775	3,850
Total Seminole	55,200	54,450
St. Louis-Pearson	18,675	18,800
Tatums	6,800	6,500
Tonkawa-Garber-Thomas	4,625	4,625
Wewoka	2,750	2,725
Yale-Jennings	3,725	3,750
Other pools	84,400	82,875
Total Oklahoma	543,650	543,600

Bureau of Mines Explains Estimates Of Requirements During February

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the demand in February is 3,438,200 bbls., 31,400 bbls. more than estimated for January, 110,600 bbls. (3 per cent) higher than the actual daily production for February, 1937, and 7 per cent higher than demand for domestic crude for that month.

Crude oil production December 4 to January 1, averaged about 3,451,000 bbls. daily. Although crude stocks increased 434,000 bbls. during this period, 418,000 bbls. of the increase was in foreign stocks, leaving production practically equivalent to demand for domestic crude.

Crude Petroleum

Crude to Stills.—Natural gasoline consumption at refineries in February is estimated as 6.2 per cent of the total gasoline required, or 2,550,000 bbls. The yield of straightrun and cracked gasoline is estimated as 43.0 per cent, or the same as for January. Application of this yield to the estimated straightrun and cracked gasoline production of 38,500,000 bbls. gives refinery crude oil requirements as 89,570,000 bbls., or 3,199,000 bbls. daily.

Foreign Crude Runs.—Foreign crude run to stills is estimated as 2,100,000 bbls.

Exports, Fuel, and Losses.—Crude oil exports have been estimated at 6,000,000 bbls., the same as estimated for January. The estimate for crude oil burned as fuel and losses has been reduced to 2,800,000 bbls.

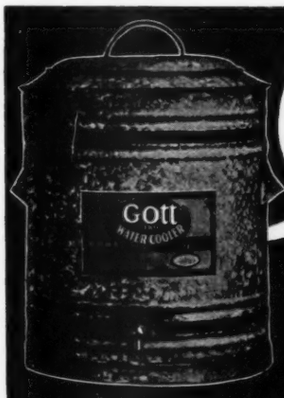
Motor Fuel

Domestic demand.—The estimate for domestic motor fuel demand for February is 32,550,000 bbls., only 2 per cent higher than the apparent demand for February, 1937, but almost 6 per cent above the estimated demand for that month.

Exports.—Motor fuel exports have been estimated at 3,200,000 bbls. for February, the decline of 600,000 bbls. from January being based on the shorter month and less optimistic reports from exporters.

Stocks.—Stocks of finished and unfinished gasoline amounted to 70,628,000 bbls. on November 30, 1937. According to the American Petroleum Institute, they increased about 6,729,000 bbls. during December, to approximately 77,400,000 bbls., December 31, compared with 63,075,000 bbls. a year previous. Stocks of December 31, 1937, represent 60 days' supply; those of December 31, 1936, represented 53 days' supply. During February, 1936 and 1937, finished gasoline stocks increased 9,144,000 bbls. and 7,160,000 bbls., respectively, and the bureau anticipates they will increase a minimum of 6,200,000 bbls. during February in connection with distillate production. The bureau emphasizes it is not recommending the above increase in stocks but merely forecasting what may occur.

Gasoline Production.—Benzol and "direct" sales and losses of natural gasoline have been estimated as 900,000 bbls., making the estimated production of gasoline 41,050,000 bbls., distributed as follows (thousands of barrels): East Coast, 5,870; Appalachian, 1,370; Indiana-Illinois, 7,000; Oklahoma, 2,660; Kansas-Missouri, 2,290; Texas Inland, 3,270; Texas Gulf, 9,280; Louisiana Gulf, 1,240; North Louisiana-Arkansas, 820; Rocky Mountain, 1,040; California, 6,210.



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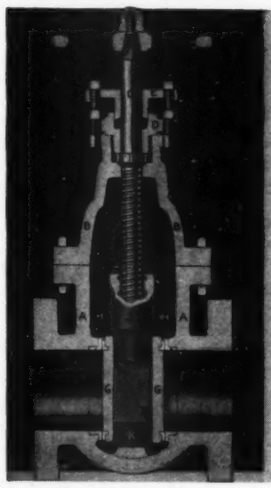

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California Field Report

By
L. P. STOCKMAN

California Deepest Drilling Is Record in Wasco District

LOS ANGELES, Calif., Jan. 24.—Continental Oil Co. broke the California deep drilling record this week by reaching 12,640 feet in No. 2-A Kern County Land a wildcat in the Wasco district of Kern County in section 8-27-24. This wildcat showed some favorable indications at 12,636 feet and the crew is coming out of the hole with a core sample at 12,640 feet. As the formation in the present bottom is unknown it is problematical whether the company has picked up the Rio Bravo oil sand found so prolific in Union Oil Co. discovery well at Rio Bravo at 11,302 feet. Union Rio Bravo well is still flowing steadily at 2,550 bbls.

It is becoming more evident the Rio Bravo field will become of considerable importance before the close of 1938. Within another 10 days there will be six wells under way by Union Oil Co., Superior Oil Co., General Petroleum Corp. and George F. Getty, Inc. At the present rate of drilling these wells will be drilled to completion in less than 90 days. In six weeks Union Oil Co. has made 7,600 feet of hole in No. 2-34 Kern County Land and Superior Oil Co. has done about the same in No. 1 Wagner.

In establishing the new deep drilling record Continental Oil Co. exceeded the depth in a joint wildcat of Union Oil Co. and Superior Oil Co. southeast of the Greeley field. This wildcat was carried to 12,618 feet and the hole abandoned after the Stevens and Rio Bravo sands had been cored and found barren. This test was in section 11-30-26 and it is interesting to note Superior Oil Co. stepped 1 mile northwest and appears to have discovered a field. The company's two first wells appear too far southwest but from indications in No. 9 Kern County Land in section 3-30-26 it is expected commercial production can be found about a mile east and possibly a mile northwest.

The status of Continental Oil Co. wildcat in the Wasco district of Kern County is of special interest because of the possible affect it may have on Seaboard Oil Co. wildcat in section 26-27-24 which has been suspended for several months at 10,243 feet. If Continental Oil Co. develops substantial production in the Wasco area Seaboard Oil Corp. should duplicate the performance as both are structural seismograph highs. Seaboard Oil Corp. wildcat is a few miles southeast of Continental Oil Co. wildcat. Completion of a deep well in the Wasco area would indicate a third line of folding in San Joaquin Basin paralleling the Semi-Tropic to Greeley and Buttonwillow to Ten Section line.

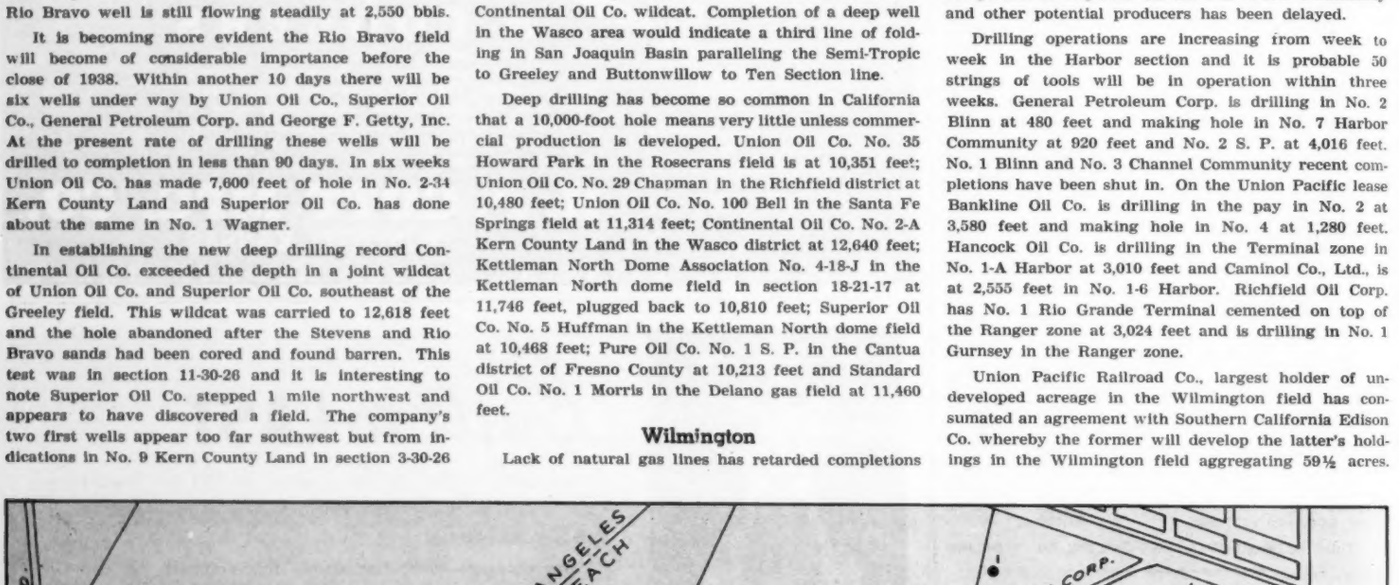
Deep drilling has become so common in California that a 10,000-foot hole means very little unless commercial production is developed. Union Oil Co. No. 35 Howard Park in the Rosecrans field is at 10,351 feet; Union Oil Co. No. 29 Chapman in the Richfield district at 10,480 feet; Union Oil Co. No. 100 Bell in the Santa Fe Springs field at 11,314 feet; Continental Oil Co. No. 2-A Kern County Land in the Wasco district at 12,640 feet; Kettleman North Dome Association No. 4-18-J in the Kettleman North dome field in section 18-21-17 at 11,746 feet, plugged back to 10,810 feet; Superior Oil Co. No. 5 Huffman in the Kettleman North dome field at 10,468 feet; Pure Oil Co. No. 1 S. P. in the Cantua district of Fresno County at 10,213 feet and Standard Oil Co. No. 1 Morris in the Delano gas field at 11,460 feet.

Wilmington

Lack of natural gas lines has retarded completions in the Long Beach Harbor section of the Wilmington field but this will be overcome by completion of Lomita Gasoline Co. gas line being laid from Wilmington to the company's natural gasoline plant at Long Beach. After starting construction of this 16-inch line the company found it necessary to encase it in cement in crossing the flood control channel. The ordinance lifting drilling restrictions in the Long Beach harbor section of the Wilmington field specifically prohibits the blowing of gas into the air. For this reason completion of Superior Oil Co. No. 1960-1 Community and other potential producers has been delayed.

Drilling operations are increasing from week to week in the Harbor section and it is probable 50 strings of tools will be in operation within three weeks. General Petroleum Corp. is drilling in No. 2 Blinn at 480 feet and making hole in No. 7 Harbor Community at 920 feet and No. 2 S. P. at 4,016 feet. No. 1 Blinn and No. 3 Channel Community recent completions have been shut in. On the Union Pacific lease Bankline Oil Co. is drilling in the pay in No. 2 at 3,580 feet and making hole in No. 4 at 1,280 feet. Hancock Oil Co. is drilling in the Terminal zone in No. 1-A Harbor at 3,010 feet and Caminol Co., Ltd., is at 2,555 feet in No. 1-6 Harbor. Richfield Oil Corp. has No. 1 Rio Grande Terminal cemented on top of the Ranger zone at 3,024 feet and is drilling in No. 1 Gurnsey in the Ranger zone.

Union Pacific Railroad Co., largest holder of undeveloped acreage in the Wilmington field has consumated an agreement with Southern California Edison Co. whereby the former will develop the latter's holdings in the Wilmington field aggregating 59½ acres.



Numerous locations are waiting the drill in the Long Beach Harbor section of the Wilmington field

Southern California Edison Co. has two parcels in the Harbor area. One is a 16-acre piece consisting of a right-of-way strip 300 feet wide extending southward from Anaheim Boulevard to the Cerritos Channel. Union Pacific Railroad Co. will develop this strip on both sides by directional drilling. Southern California Edison steam plant on Terminal Island occupies 43½ acres surrounded on three sides by fee acreage of Union Pacific Railroad. This acreage on Terminal Island is susceptible of aggressive development by directional drilling without interferring with surface operations of Southern California Edison Co.

New Completions

Nine wells were completed in the Wilmington field during the week although only three were in the Harbor or eastern end. This trio was completed in the upper or Ranger zone and consequently registered only relatively small production. Allied Petroleum Corp. which recently found the Terminal zone wet in No. 23 Wilmington has completed this well flowing 347 bbls. of 17.2 gravity from the Ranger zone after plugging back the hole from 3,225 feet to 2,990 feet. This producer, the first completion in the southeastern part of the field, was brought in flowing through a 20/64-inch bean. Northwest of this well General Petroleum Corp. completed No. 1 Blinn flowing 202 bbls. of 16.5 gravity initially from the Ranger zone at 3,295 feet after the hole had been carried to 3,464 feet and finished with 411 feet of 6⅝-inch liner including 315 feet of 50-mesh screen after the hole had been plugged back to completion depth. No. 3 Channel Community of General Petroleum Corp., the most easterly producer in the field, has been completed flowing 246 bbls. of 15.6 gravity daily from 3,190 feet. This Ranger zone completion was bottomed at 3,352 feet and finished with 385 feet of 6⅝-inch liner including 334 feet of 50-mesh screen after the hole had been plugged back to completion depth. General Petroleum Corp. No. 11 Terminal, west of Ford Motor Co. assembly plant and a few hundred feet northwest of No. 1 Terminal the discovery well, has been completed pumping 51 bbls. of 15.3 gravity from the Ranger zone at 2,879 feet after the hole had been plugged back from 2,930 feet because of bottom water in the Ranger zone.

Union Pacific Railroad Co. completed three wells in Wilmington during the week and should have three ready for a production test within 10 days. The No. 1 EU, an offset to Bankline Oil Co. No. 23 D.H.C. and south of Anaheim Boulevard, was completed flowing 546 bbls. of 22.2 gravity from 3,250 feet. This well, completed flowing through a 32/64-inch bean was finished with 290 feet of 6⅝-inch liner including 264 feet of 60-mesh landed at 3,220 feet. No. 76, southwest of No. 1 EU, was completed flowing 440 bbls. of 21.4 gravity from 3,165 feet. This well was completed with 320 feet of 6⅝-inch liner including 269 feet of perforated landed at 3,160 feet. Union Pacific No. 62 in the northwestern part of the company's holdings, was completed pumping 190 bbls. of 15.4 gravity cutting 12 per cent initially from 3,456 feet. Bankline Oil Co. has completed No. 4-6 Watson in the northeastern part pumping 165 bbls. of 14.1 gravity oil from 3,608 feet. No. 1 Keagy of Royalty Service Corp., at Denni Street and Banning Boulevard in the northwestern part, approximately four blocks north of Anaheim Street, has been completed pumping 210 bbls. of 16.5 gravity from 3,619 feet after the hole had been finished with 686 feet of 5¾-inch liner carrying perforations at 2,967-97 feet, 3,174-3,204 feet and at 3,352-3,618 feet.

Santa Maria Valley

Four wells were completed in the Santa Maria Valley field of Santa Barbara County during the week. The outstanding completion was No. 1 Rembush of Petroleum Securities Co. in section 35-10-34. This well, brought in pumping 860 bbls. of 12.9 gravity initially from 5,433 feet, is the most southerly producer in the Santa Maria Valley field. The gravity is of special interest as it is approximately 5 degrees lower than crude produced by the closest well. George F. Getty, Inc., has completed No. 2 Vicente in section 27-10-34 pumping 450 bbls. of 16.5 gravity initially from 4,654 feet. This well which topped the Franciscan basement at 4,638 feet and was finished with 476 feet of 6⅝-inch liner including 395 feet of perforated landed on bottom is expected to show a much larger production as inadequate storage facilities prevented it from showing maximum production. Signal Oil & Gas Co. has completed No. 1 Romalho in section 27-10-34 flowing 1,575 bbls. of 16.9 gravity from 4,622 feet and preparations have been started to drill two additional wells. The Hancock-Bush interests which have concluded drilling operations on No. 2 California Lands in section 30-10-33 at 4,312 feet will drill four additional wells on this property to comply with lease requirements.

Bringing in its second substantial producer within a week on its Santa Maria Valley holdings, Union Oil Co. put its No. 1 Acquistapace on production flowing 446 bbls. of 16.3 gravity and 135,000 feet of gas from 4,361 feet. It is flowing through a 56/64-inch bean, with 420 pounds pressure on the casing and 40 pounds on the tubing. The company immediately spudded No. 1 George J. Wheat, an offset in the northeast quarter of section 22-10-34, and staked location for No. 1 Silva which will offset the company's No. 2 Le Roy, most westerly well. In the Adam area the company has spudded No. 2 Bettiga in section 24-10-34 and No. 3 Moretti in the same section is standing cemented at 790 feet. E. H. Moore, Inc., is not experiencing any unusual success in developing the Union Sugar property in the Santa Maria Valley field as only three relatively small producers have been completed. The company abandoned No. 10-L in section 30-10-34 when a formation test showed salt water in the bottom of the hole at 6,343 feet.

Montebello

In the extreme western end of the Montebello field of Los Angeles Basin where St. Helens Petroleum Co. recently proved the Miocene productive operators are completing plans for aggressive development. St. Helens has completed a derrick for No. 24 Monterey. Pongratz Oil Co. which has had considerable success in the Mount Poso and Wilmington fields has staked location west of the reservoir and south of Lincoln Avenue, approximately 2,100 feet southwest of No. 20

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	January 14 — Total this week	January 14 — Daily average	January 7 — Total last week	January 7 — Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	70,808
Gasoline	122,959	17,565	.....	.....	122,959	79,106
Foreign exports:						
Crude oil	159,345	22,764	123,496	17,642	282,841	40,918
Fuel oil	275,873	39,410	.....	.....	275,873	581,292
Diesel and gas oil	64,634	9,233	82,125	11,732	146,759	374,390
Gasoline	77,312	11,045	79,846	11,407	157,158	192,029
Kerosene	.....	.....	108,510	15,501	108,510	22,960
Coastwise-domestic:						
Crude oil	64,928	9,275	139,042	19,863	203,970	198,960
Fuel oil	235,587	33,655	405,530	57,933	641,117	313,539
Diesel and gas oil	9,643	1,378	43,789	6,256	53,432	14,119
Gasoline	182,068	26,010	433,371	61,910	615,439	392,455
Kerosene	9,201	1,314	6,706	958	15,907	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	75,895
Foreign exports:						
Crude oil	245,949	35,136	.....	.....	245,949	244,600
Fuel oil	26,031	3,719	.....	.....	26,031	.....
Diesel and gas oil	98,893	14,128	.....	.....	98,893	133,659
Gasoline	66,122	9,446	.....	.....	66,122	81,983
Kerosene	39,946	5,707	.....	.....	39,946	3,229
Lubricants	.....	.....	.....	.....	.....	8,521
Coastwise-domestic:						
Fuel oil	99,437	14,205	169,782	24,255	269,219	274,384
Diesel and gas oil	45,612	6,516	39,416	5,631	85,028	58,124
Gasoline	214,128	30,590	198,311	28,330	412,339	258,328
Kerosene	22,811	3,259	18,140	2,591	40,951	3,367

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$ .80	$ .79	$ .74	$ .78	$ .79	$ .80	$ .76	....	....	....	$ .80	$ .76	$ .76	$ .77	$ .78	....	....	$ .70	$ .70	$ .70	....	....	$ .70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	$ .70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$ .70	.74	.74	.71	$ .70	....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.78	.78	.72	.70	....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$ .78	.73	.82	.82	.74	.70	....	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$ .84	$ .79	....	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	....	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	....	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	1.01	.98	.90	.83	....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	1.06	1.02	....	....	....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	1.10	1.06	....	....	....	.95	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	1.15	1.10	....	....	....	.97	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	1.20	1.14	....	....	....	.99	....
30-30.9	1 21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	1.25	1.18	....	....	....	1.01	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	1.29	....	....	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.34	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.38	....	....	....	$1.19	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	1.23	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.25	....	1.29	....	....	....	....	....	1.27	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	1.31	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9 $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

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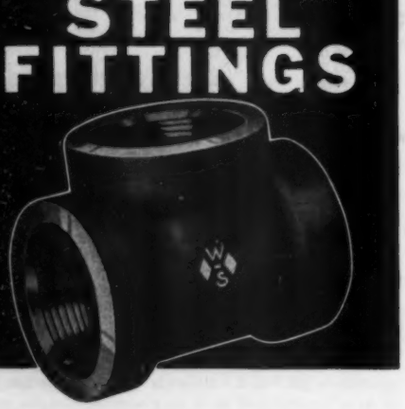

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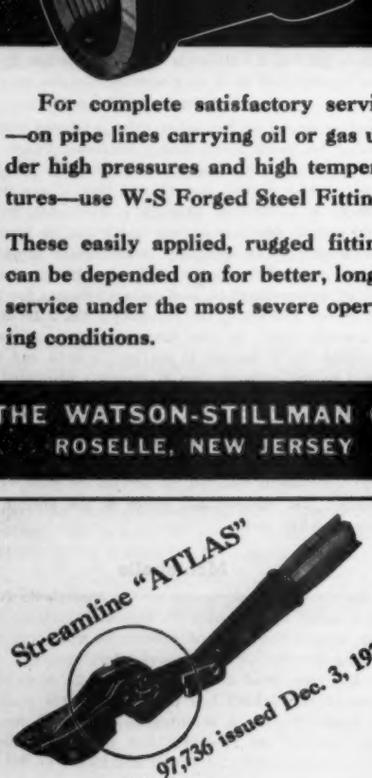

Patent No. 97,736 issued Dec. 3, 1935.

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Monterey, the deep zone discovery well of St. Helens Petroleum Co. Standard Oil Co. has not yet undertaken any preliminary work on the Benedictine and Whitehead leases but is expected to deepen one of the shallow producers or start a well on one of the leases. Development of deep zone production in the west end has created a drilling problem but prospects are favorable for an early solution by a new zoning ordinance expected to be passed by the Montebello city council. Since completion of No. 20 Monterey of St. Helens Petroleum Co. the city council has been attempting to prepare an ordinance that would satisfy those who wished to lease their property for development and others who wanted to retain their homes for residential purposes. The ordinance which will probably become effective early in March lifts all drilling restrictions in the territory north of Beverly Boulevard from Wilcox Avenue to the eastern city limits. This area, approximately 1 mile long and 750 feet wide, has heretofore been restricted.

Ten Section

Standard Oil Co. after drilling two dry holes has succeeded in completing a flowing well in the extreme eastern end of the Ten Section field heretofore controlled by Shell Oil Co. Standard No. 15-1 Kern County Land in section 27-30-26 was completed flowing 600 bbls. of 29.1 gravity from 8,070 feet after the hole had been carried to 8,135 feet and plugged back to completion depth. This outpost will necessitate offset drilling by Shell Oil Co. as Standard Oil Co. will probably move one location north and drill a second well. No. 15-1 Kern County Land extends the productive limits approximately 1 mile east. Just previous to completion of Standard Oil Co. outpost, Shell Oil Co. completed No. 27-B in section 30-30-26 flowing 2,250 bbls. of 35.1 gravity and 1,500,000 feet of gas from 8,200 feet after the hole had been carried to 8,299 feet and plugged back to completion depth. No. 27-B Kern County Land of Shell Oil Co. extended production in the southwestern end of the field.

Standard Oil Co. is abandoning No. 12-3 Kern County Land in the Greeley field of Kern County due to the unfavorable outlook. This well is a north line offset of Superior Oil Co. No. 1 Krause which found the Greeley sand barren and was suspended at 8,178 feet. No. 17-1 Kern County land in section 9-29-26 approximately one-half mile north of No. 12-2 Kern County Land, a small producer of Standard Oil Co. and about 1 mile north of Superior Oil Co. No. 1 Krause, has also been abandoned. No. 17-1 Kern County Land was carried to 8,500 feet by Standard geological department and drilling was suspended at 8,500 feet in a gray sand. Standard No. 11-12 Kern County Land, a west line offset of Superior No. 1 Krause, has been plugged back from 7,902 feet to 7,853 feet after finding the Greeley oil sand barren preparatory to whipstocking the hole southwest. Superior Oil Co. No. 1 Krause and Standard Oil Co. No. 11-12 Kern County Land appear to limit the eastern edge as both found the Greeley sand barren. The latter well may, however, be completed as a result of directional drilling.

Kettleman Hills

Kettleman North Dome Association should be ready to make a production test on No. 4-18-J in section 18-21-17 within 10 days with some indication of the production possibilities of the Eocene in the western end of the Kettleman North dome structure. This well flowed for several days last year at the rate of 1,212 bbls. and 19,500,000 feet of gas but was not allowed to produce long enough to afford definite data regarding sustained production. Superior Oil Co. has been having difficulty in deepening No. 5 Huffman from the Tembior to the underlying Eocene and last week found it necessary to cement a fish in place in order to facilitate drilling. This well bottomed at 10,468 feet has had some minor showings but apparently has not yet found the main body of Eocene oil sand encountered by Kenda in No. 4-18-J. No. 5 Huffman, higher on the structure, was expected to log the Eocene at about 10,100 feet. This well has had four fishing jobs since leaving the 8,300-foot level. During the week Union Oil Co. recompleted No. 1 King flowing 835 bbls. of 34.1 gravity and 850,000 feet of gas after the hole was cleaned out to bottom at 8,310 feet. This well is expected to be deepened to the Eocene if Superior Oil Co. succeeds in completing No. 5 Huffman as a commercial producer in the Eocene. Standard Oil Co. No. 27-21-J in section 21-21-17, being carried down as a test of the Eocene, has reached 9,590 feet but still has another 1,000 feet to make before reaching the top of the Eocene oil sand found by Kettleman North Dome Association. Out in the Felix section of the North dome, Bandini Petroleum Co. is at 9,025 feet in No. 5 Whepley originally drilled and abandoned by Tide Water Associated Oil Co. This well is rather far out on the north flank and judging by the dip of the structure at this point will have to go below 11,000 feet to reach the top of the Eocene.

Ventura County

Texas Co. has started a projected deep test on the Richardson Yale property in the South Mountain field of Ventura County in section 13-3-21. Deep production should be developed although the frequency of occurrence does not always hold true. In the Camarillo district of Ventura County Texas Co. made a forma-

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tion test on No. 1 Edwards, a wildcat in section 19-2-21, but the result was inconclusive. Bottom is 5,874 feet and the tester at 5,845-5,793 feet was open 30 minutes. The well flowed at the rate of 1,000,000 feet of gas per day but only slight indications of oil were logged. The Oxnard district of Ventura County appears to have shown sufficient encouragement to induce additional development as Vaca Oil Co. will undertake further development within 60 days. This company's No. 1 Lennox in section 6-1-21 pumps about 270 bbls. of 14.9 gravity from 2,885 feet but the company is obliged to circulate about 20 bbls. of distillate to stimulate production. General Petroleum Corp. has concluded drilling operations on No. 13 Notten in the Ventura Avenue field at 9,871 feet and has landed a string of 5¾-inch at 9,857 feet and cemented through perforations at 9,549 feet.

Midway-Sunset

Two very small producing wells were completed in the Midway-Sunset field but as both were in depleted areas the small output was not unexpected. Ethel D Oil Co. No. 21-A in section 36-12-24 was completed pumping 11 bbls. of 14.9 gravity from 1,235 feet after the hole had been finished with 335 feet of 8⅝-inch liner including 202 feet of 50-mesh screen landed on bottom. Chanslor Canfield Midway Oil Co. No. 76 in section 6-32-23 was good for only 15 bbls. of 21.1 gravity from 1,150 feet and is cutting about 50 per cent. Drilling operations are showing a continued decline in the Midway-Sunset field and will probably show a further drop within 30 days unless some well should prove additional acreage. The Mountain View and Mount Poso fields have also showed a slowing up but Rio Bravo and Round Mountain are showing increased work. In the Round Mountain operators are proceeding with normal development in the Pyramid Hills area and in the McDonald area at the northern tip of the original Round Mountain area. During the week D. G. Vedder completed No. 4 Bell in section 12-28-28 pumping 272 bbls. of 14.7 gravity from 1,836 feet and should have No. 5 Bell tanking oil within a few days as it is being rigged up to pump.

Los Angeles Basin

In the Torrance field of Los Angeles Basin eight former upper zone producers are drilling to the new deep zone or are making preparations to begin work. This new deep zone is not highly productive but offers a method of increasing production as many wells have declined to a few barrels per day. In the new zone initial production has been averaging around 150 bbls. In the Long Beach field which has just about been completely drilled up Richfield Oil Corp. has completed No. 19 Haas pumping 241 bbls. of 24.2 gravity cutting 7 per cent water from 3,025 feet. Production is not expected to clean up as the zone at this point is definitely wet as a result of edgewater encroachment. In the West Coyote field Severns Drilling Co. has recompleted No. 2 McNally pumping 98 bbls. of 24.9 gravity from 4,360 feet after reconditioning hole and redrilling to completion depth. The lower part of the hole between 4,360 feet and 7,272 feet has been junked. Drilling operations in the El Segundo field have begun to taper off as the northern limits of production in the town lot area have been determined by a dry hole. Recent completions have shown a consistently declining initial and in addition have required the installation of pumping equipment or other artificial stimulation.

Eastern Fields

(Continued from Page 194)

trict. In Grant district, Robert Broadwater and others have a rig standing for a second test on the Royal B. Ash farm.

In Putnam County, Velaair C. Smith and others started a test on the East End Land Co. in Teays Valley district. In Butler district, Garggston Oil & Gas Co. is drilling on the Oliver Viers farm.

In the gas pool in Glenville district, Gilmer County, Everett Hughes has a rig on the Fred Whiting farm. Pittsburgh & West Virginia Gas Co. has a rig on the Dolph Moffatt farm. C. Fred Wilson has made a location on the Roy Kirkpatrick farm. In DeKalb district, Ellyson and others have a rig on the G. O. Bennett farm.

In Lewis County, Hope Natural Gas Co. is drilling on the Amanda Summers farm in Skin Creek district. In Union district, Barbor County, this company is down 1,300 feet on the Indian Fork Coal Co. lease.

In Braxton County, Pittsburgh & West Virginia Gas Co. has the following wells drilling: No. 7269 G. B. Howell at 190 feet; No. 7630 Parkersburg Mill at 1,970 feet; No. 7637 M. E. Ramsey at 2,025 feet; No. 7640 E. F. Martin at 2,689 feet; and No. 7642 D. B. Woodyard at 2,109 feet.

In Wood County, J. C. Leonard and others have started a second test on the E. E. and A. P. Anderson farm in Union district. In Walker district, Pleasant Hill Oil Co. has started a second test on the Hannah Stilenbauer farm.

Paul L. Vaudoit, petroleum engineer on the Gulf Coast with Shell Petroleum Corporation for the past 11 years, has resigned to engage in business for himself as consulting petroleum engineer. Mr. Vaudoit is a graduate of Leland Stanford Junior University and for some time was connected with the U. S. Bureau of Mines.

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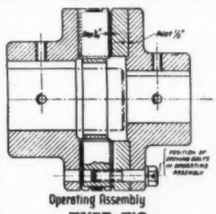
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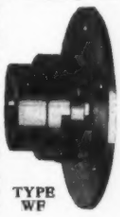
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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Jan. 22.—Pipe line runs from the Turner Valley field to Imperial Oil Refineries, Ltd., and British American Oil Co. at Calgary in December totaled 326,133 bbls. compared with 282,908 bbls. in November. Receipts of Imperial Oil Refineries included 40,561 bbls. of naphtha and 186,518 bbls. of crude; while British American Oil Co. took 2,375 bbls. of naphtha and 96,679 bbls. of crude.

The December figures, which establish a new high record, bring the total pipe line runs for the year to 2,363,743 bbls., more than double the 1936 total of 1,040,036 bbls. Since September 12, production has been prorated; it is estimated that the potential for December exceeded 850,000 bbls.

Crude Potentials Tested

Officials of the petroleum and natural gas division of the Alberta Lands and Mines Department have completed five-day tests to determine potentials of Turner Valley crude producers. The testing operations covered 35 producers of which eight were completed prior to Turner Valley Royalties No. 1, which really opened the west flank crude area. The list shows an aggregate crude potential of 26,803 bbls. a day.

Following completion of the tests, proration was changed from 35 to 42 per cent, J. H. McLeod, western production manager of Imperial Oil, Ltd., making the following announcement:

"The government test of crude oil wells in Turner Valley to ascertain the potential of each well has now been completed, with the result that we find there is at the present time connected to the pipe lines of this company a potential of 25,612 bbls. a day.

"Due to on increased demand at the refineries for a further supply of crude oil, it is possible at the present time to deliver 42 per cent of the potential of the crude oil connected to the company's lines. Therefore, we are prepared to take 42 per cent of the potential as determined by government test.

"In addition to the 42 per cent of the crude oil for the time being we find we can handle, the company is obliged to transport 1,800 bbls. per day of white products (naphtha) through its pipe line to the Calgary refinery."

Crude marketed by trucks to independent refineries is estimated at an additional 1,500 bbls. a day.

Tests in the Lime

On the west flank of South Turner Valley, West Flank Oil Co. No. 1, N half LSD 1, section 32-18-2w5, was finished at 6,827 feet after getting the Madison limestone at 6,542 feet. Tubing was run and the hole cleared of drilling fluid. Initial production was estimated at 500 bbls. a day, before acidizing.

In section 28-18-2w5, Richland Royalties No. 2, LSD 5, is below 6,710 feet after getting the Madison at 6,410 feet. It has a fairly strong gas flow and considerable light crude, but will be deepened to below 6,800 feet.

In the south end, Sunset Oils No. 1, LSD 10, section 20-18-2w5, finished in the lime at 7,475 feet with a flush production estimated at 1,000 bbls. a day, has been acidized and will be officially tested for potential. In the same section, Spy Hill Royalties No. 1, LSD 16, offsetting Royal Canadian Oils No. 1 producer to the east, got the lime at 6,570 feet and is cementing below 6,584 feet.

In section 21-18-2w5, Sovereign Royalties No. 1, LSD 14, finished last year as a small naphtha producer, is apparently turning to crude. During November it produced about 30 bbls. a day of 80-gravity naphtha but is now making 65-gravity crude, while the flow has stepped up to 45 bbls. a day. The well was acidized early last year, and it is thought delayed acid action may have caused the change in production.

West Central Producer

In west central Turner Valley, Brown Oil Corp. No. 3, LSD 15, section 19-19-2w5, was finished at about 6,771 feet after getting the Madison limestone at 6,335 feet. Production is being tested, with indications of a good crude producer. This is the first west flank test in the west central area to get crude production in the Madison, though farther south Miracle No. 2 has been producing crude for several years. The well was undertaken last year as a definite test of this area in which Calgary & Edmonton Corp., Mar Jon Oil Co., Okalta Oil Co., Calmont Oils and Kermac Petroleums participated with Brown Oil Corp. It is about 6½ miles north and 2 miles west of Royal Crest No. 1, the most northerly crude producer in section 32-18-2w5.

West Side Drilling

In section 32-18-2w5, Royalite Oil Co. No. 28, LSD 16, is below 5,884 feet. Royalite No. 30, LSD 11, has spudded, and is below 172 feet. Davies Petroleums No. 4, LSD 10, will spud before April 15.

In section 20-18-2w5, Intercity Royalties No. 1, LSD 11, is working on derrick. The test is being sponsored by R. A. Brown, Sr., and associates of Calgary. York Oils No. 1, LSD 2, is working on derrick.

In section 16-18-2w5, Frontier Royalties No. 1, LSD 11, is rigged ready to spud. Okalta Oil Co. No. 7, LSD 3, is spudding. Okalta Oil Co. No. 8, LSD 6, is working on derrick.

In section 33-17-2w5, Davies Petroleums No. 3, LSD 7, has finished gas line from the British American absorption plant, and is spudding.

Okalta Structure

On the Okalta fold, west of Turner Valley, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is below 3,805 feet and running 10¾-inch casing, preparatory to salvaging the 13⅜-inch. Rotary outfit is being hauled, and will complete the well from this depth.

North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 29 Turner Basin, has resumed after cementing casing in the top of the Madison limestone at 6,299 feet. Phillips Royalties No. 1, LSD 16, section 16-20-3w5, has sidetracked and carried casing below the lost string at 4,200 feet, and is making new hole.

East Side Drilling

On the Calling Valley structure east of Turner Valley, Sentinel Oil Co. No. 1, LSD 1, section 8-20-2w5, is below 6,500 feet.

(Continued on Page 225)

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2:45 pm	Lv.. ..Tulsa.....Ar.		11:30 pm
10:00 pm	Ar....Ft. Worth. .Lv.		3:50 pm
10:05 pm	Ar.....Dallas.....Lv.		4:00 pm
7:45 am	Ar.....Houston....Lv.		For Return Service, ask the Ticket Agent.
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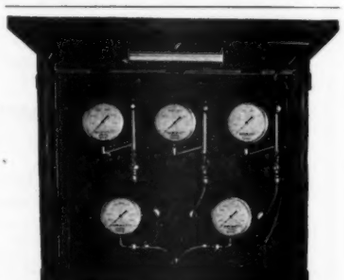

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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Wilshire Oil, No. 1 Gaviota, Santa Barbara	35- 5-33	922	cmtd. 210
Hancock-Bush, No. 2-C.L. Santa Maria, Santa Barbara	30-10-33	4,312	rig to pump
Hancock-Bush, No. 3-H Santa Maria, Santa Barbara	30-10-33	4,820	flow 1,350 b.d.
Anderson, Joseph, No. 1 A.&T., S. Maria, S. Barbara	28-10-34	1,148	sd. sh. drlg.
Ohio Oil, No. 3-M Santa Maria, Santa Barbara	21-10-34	4,259	sd. sh. drlg.
Dugan Oil, No. 1 Yelkin, Santa Maria, Santa Barbara	27-10-34	4,683	flow 2,360 b.d.
Edco Oil, No. 1 Santa Maria, Santa Barbara	27-10-34	2,684	sd. sh. drlg.
Petroleum Prop., Inc., No. 1-R S. Maria, S. Barbara	19-10-33	2,200	cleaning out
De Laine Pet., No. 3 Mills, Santa Maria, S. Barbara	27-10-34	1,198	sd. sh. drlg.
Cal. Lands, Inc., No. 2 Santa Maria, Santa Barbara	26-10-34	4,755	hd. sh. drlg.
Moore, E. H., No. 13-E Sugar, Santa Maria, S. Barbara	24-10-35	3,140	sd. sh. drlg.
Moore, E. H., No. 10-L Sugar, Santa Maria, S. Barbara	30-10-34	6,350	dry; abd.
Moore, E. H., No. 1-G Sugar, Santa Maria, S. Barbara	19-10-34	3,581	sd. sh. drlg.
Pet. Sec., No. 1-R Santa Maria, Santa Barbara	35-10-34	5,435	sd. sh. drlg.
Signal Oil, No. 1 Romalho, Santa Maria, S. Barbara	27-10-34	4,622	sd. sh. drlg.
Signal Oil, No. 2 Romalho, Santa Maria, S. Barbara	27-10-34	1,998	sd. sh. drlg.
Union Oil, No. 1-A Santa Maria, Santa Barbara	22-10-34	4,361	flow 460 b.d.
Union Oil, No. 2-V, Santa Maria, Santa Barbara	21-10-34	611	sd. sh. drlg.
Union Oil, No. 3 Mor., Santa Maria, Santa Barbara	24-10-34	800	sd. sh. drlg.
Union Oil, No. 2-B Santa Maria, Santa Barbara	24-10-34	780	sd. sh. drlg.
Union Oil, No. 1 Wheat, Santa Maria, Santa Barbara	22-10-34	776	sd. sh. drlg.
Union Oil, No. 17 Cal. Coast, Orcutt, Santa Barbara	26- 9-34	4,515	looks wet
Union Oil, No. 20 Squires, Orcutt, Santa Barbara	27- 9-34	2,992	sd. sh. drlg.
Cole, F. E., No. 16 Santa Maria, Santa Barbara	23-10-34	3,315	sd. sh. drlg.
Getty, George F., No. 2-V, Santa Maria, Santa Barbara	27-10-34	4,654	flow 1,200 b.d.
Pac. West. Oil, No. 2-S, Santa Maria, Santa Barbara	27-10-34	3,651	sd. sh. drlg.
Pac. West. Oil, No. 3-D, Santa Maria, Santa Barbara	27-10-34	136	sd. sh. drlg.
Pima Drlg., No. 1 Morganti, Casmalia, Santa Barbara	13- 9-35	1,676	sd. sh. drlg.
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	3,830	drlg. 1,970
Tweedy, A. E., No. 1 Penn, Capitan, Santa Barbara	34- 5-31	1,610	sd. sh. drlg.
Texas Co., No. 134 Shiells, Shiells Canyon, Ventura	4- 3-19	4,480	P.B. 3,814
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,300	hd. sd. drlg.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	1,159	sd. sh. drlg.
Richfield Oil, No. 1 McFarland, Camarillo, Ventura	13- 2-21	7,760	sd. sh. drlg.
Texas Co., No. 1 Edwards, Camarillo, Ventura	19- 2-21	5,874	sd. sh. drlg.
Trucano, G., No. 1 Simi, Ventura	5- 2-17	995	gr. sh. drlg.
Stalling & Senter, No. 1 Timber Canyon, Ventura	24- 4-21	503	O.S. drlg.
Section 20 Oil, No. 1 Sespe, Ventura	20- 5-19	1,196	hd. sh. drlg.
Garmack Oil, No. 1 Orcutt, Sespe, Ventura	28- 5-19	401	sd. sh. drlg.
Condor Oil, No. 1 Dorman, Sespe, Ventura	6- 4-19	2,193	fish, bailer
Skyline Oil, No. 1-H Hopper Canyon, Ventura	13- 4-19	2,650	sd. sh. drlg.
Commander Oil, No. 6-F Hopper Canyon, Ventura	13- 4-19	2,027	recmtd. 1,300
Continental Oil, No. 8-A Grubb, San Miguelito, Ven.	24- 3-24	6,251	O.S. drlg.
C. C. M. Oil, No. 11 Rincon, Ventura	17- 3-24	4,057	flow 610 b.d.
Richfield Oil, No. 1 State, Rincon, Ventura	17- 3-24	4,281	redrlg. 2,580
Rowe, W. G., No. 1 Johnson, Oxnard, Ventura	15- 1-22	2,602	sd. sh. drlg.
Tide Water A. O., No. 19 V.L.W., Ventura, Ventura	26- 3-23	5,131	sd. sh. drlg.
Tide Water A. O., No. 41 V.L.W., Ventura, Ventura	24- 3-23	3,194	sd. sh. drlg.
Tide Water A. O., No. 69 Lloyd, Ventura, Ventura	27- 3-23	5,574	sd. sh. drlg.
Tide Water A. O., No. 79 Lloyd, Ventura, Ventura	27- 3-23	2,991	sd. sh. drlg.
Tide Water A. O., No. 135 Lloyd, Ventura, Ventura	27- 3-23	8,900	hd. sh. drlg.
Tide Water A. O., No. 138 Lloyd, Ventura, Ventura	23- 3-23	7,682	hd. sd. drlg.
Tide Water A. O., No. 18 Hartman, Ventura, Ventura	22- 3-23	9,800	sd. sh. drlg.
Shell Oil, No. 93 Taylor, Ventura Ave., Ventura	20- 3-23	2,198	sd. sh. drlg.
General Pet., No. 13 Notten, Ventura Ave., Ventura	28- 3-23	9,871	C.P. 9,549
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	6,260	br. sh. drlg.
Rocima Oil, No. 1 Laymance, McKittrick, Kern	20-30-22	2,725	sd. sh. drlg.
Standard Oil, No. 2 Randolph, Semi-Tropic, Kern	14-27-23	8,860	sd. sh. drlg.
Continental Oil, No. 2 KCL, Wasco, Kern	8-27-24	12,397	gr. sd. drlg.
Chico-Martinez Oil, No. 1 South Belridge, Kern	1-29-20	800	gr. sh. drlg.
Belridge Oil, No. 27-7 North Belridge, Kern	27-27-20	5,900	br. sh. drlg.
Belridge Oil, No. 27-8 North Belridge, Kern	27-27-20	7,681	br. sh. drlg.
Belridge Oil, No. 27-61 North Belridge, Kern	27-27-20	8,210	cmtd. 8,190
Belridge Oil, No. 28-1 North Belridge, Kern	28-27-20	7,995	br. sh. drlg.
Tide Water A. O., No. 7 Reward, North Belridge, Kern	34-27-20	7,481	br. sh. drlg.
Tide Water A. O., No. 1-21 North Belridge, Kern	21-27-20	7,201	cleaning out
Tide Water A. O., No. 2-21 North Belridge, Kern	21-27-20	6,797	br. sh. drlg.
Richfield Oil, No. 1-A North Belridge, Kern	22-27-20	4,994	br. sh. drlg.
Texas Co., No. 2 Martin, North Belridge, Kern	22-27-20	7,782	fsg. D.P.
Texas Co., No. 3 Martin, North Belridge, Kern	22-27-20	3,680	br. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	6,004	fsg.
Crestmont Oil, No. 2 Staley, Round Mountain, Kern	8-28-29	1,780	pump 210 b.d.
Eastmont Oil, No. 5 Olcese, Round Mountain, Kern	16-28-29	1,755	rig to pump
Tampico Pet., No. 5 B.&G., Round Mountain, Kern	17-28-29	1,651	sd. sh. drlg.
Richfield Oil, No. 1 Olcese, Round Mountain, Kern	17-28-29	1,426	sd. sh. drlg.
Shell Oil, No. 2 Olcese, Round Mountain, Kern	21-28-29	1,905	P.B. 1,810
Pet. Sec., No. 6 Coffee, Round Mountain, Kern	1-28-28	1,851	sd. sh. drlg.
Long, Harry, No. 1 Coffee, Round Mountain, Kern	2-28-28	1,798	sd. sh. drlg.
Vedder, D. G., No. 4 Bell, Round Mountain, Kern	12-28-28	1,836	pump 270 b.d.
Vedder, D. G., No. 5 Bell, Round Mountain, Kern	12-28-28	1,853	sd. sh. drlg.
Marcan Oil, No. 2 C. L. Round Mountain, Kern	12-28-28	2,031	pump 320 b.d.
Marcan Oil, No. 3 C. L. Round Mountain, Kern	12-28-28	2,058	O.S. drlg.
California Star Oil, No. 3-80 Kern Front, Kern	22-28-27	2,755	cleaning out
Kern River Oilfields, No. 25-4-B Kern Front, Kern	25-28-27	2,074	P.B. 2,036
Deep Zone Oil, No. 1 Kern Front, Kern	20-28-27	2,697	sd. sh. drlg.
Pebble Beach Oil, No. 6 Newhope, Mount Poso, Kern	29-27-27	2,653	fsg. bailer
Shell Oil, No. 1 Keystone, Deep Well Ranch, Kern	4-26-27	3,097	sd. sh. drlg.
Western Gulf Oil, No. 31-B KCL Fruitvale, Kern	14-29-27	2,892	sd. sh. drlg.
Cal-West. Oil, No. 1 KCL, Fruitvale, Kern	14-29-27	3,251	sd. sh. drlg.
Pacific O. & G., No. 1-F Fruitvale, Kern	14-29-27	3,017	cleaning out
Texas Co., No. 1 Bastain, Mountain View, Kern	34-30-29	3,298	sd. sh. drlg.
Hogan Pet., No. 5 Symons, Mountain View, Kern	4-31-29	6,129	redrlg. 6,097
Petrex, Inc., No. 1 Arvin, Kern	32-31-30	3,148	dry; abd.
Superior Oil, No. 1 Wagner, Rio Bravo, Kern	35-28-25	8,885	sd. sh. drlg.
Superior Oil, No. 1 Geissinger, Rio Bravo, Kern	32-28-25	4,761	sd. sh. drlg.
Superior Oil, No. 1 Ruhl, Rio Bravo, Kern	1-29-25	175	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	8,561	sd. sh. drlg.
Getty Oil, No. 1 Ramsey, Rio Bravo, Kern	35-28-25	246	sd. sh. drlg.
General Pet., No. 1 Wagner, Rio Bravo, Kern	35-28-25	176	sd. sh. drlg.
Continental Oil, No. 1 Rosedale, Kern	12-29-26	10,210	dry; abd.
Superior Oil, No. 9 KCL, Greeley, Kern	3-30-26	7,870	cleaning out
Standard Oil, No. 1 Calder Klassen, Greeley, Kern	20-29-26	2,141	sd. sh. drlg.
Standard Oil, No. 11-2 KCL, Greeley, Kern	20-29-26	8,895	sd. sh. drlg.
Standard Oil, No. 11-8-A KCL, Greeley, Kern	18-29-26	7,846	flow 300 b.d.
Standard Oil, No. 11-12 KCL, Greeley, Kern	20-29-26	7,902	P.B. 7,853
Standard Oil, No. 12-3 KCL, Greeley, Kern	16-29-26	5,135	dry; abd.
Standard Oil, No. 17-1 KCL, Greeley, Kern	9-29-26	8,507	dry; abd.
Standard Oil, No. 15-1 KCL, Ten Section, Kern	27-30-26	8,135	form. test
Shell Oil, No. 32-29-A KCL, Ten Section, Kern	29-30-26	8,029	O.S. drlg.
Shell Oil, No. 85-25-B KCL, Ten Section, Kern	25-30-26	7,591	sd. sh. drlg.
Shell Oil, No. 52-31-B KCL, Ten Section, Kern	31-30-26	6,497	sd. sh. drlg.
Shell Oil, No. 27-30-B KCL, Ten Section, Kern	30-30-26	8,299	P.B. 8,250
Shell Oil, No. 72-14-A KCL, Canal, Kern	14-30-25	8,036	cmtd. fsg.
Ohio Oil, No. 4-E KCL, Canal, Kern	13-30-25	7,588	sd. sh. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	2,900	sd. sh. drlg.
Merritt-Annex Oil, No. 7 Midway-Sunset, Kern	25-12-24	3,390	hd. sd. drlg.
C. C. M. Oil, No. 76-6 Midway-Sunset, Kern	6-32-23	1,150	pump 15 b.d.
Pattiway Oil, No. 4 Midway-Sunset, Kern	12-11-24	1,662	sd. sh. drlg.
Hoyt, Otis, No. 8 Midway-Sunset, Kern	7-11-23	1,588	sd. sh. drlg.
Iriquois Oil, No. 2 Midway-Sunset, Kern	7-11-23	1,800	sd. sh. drlg.
Chemeketa Oil, No. 1 Midway-Sunset, Kern	15-32-23	2,407	P.B. 2,350
Signal Oil, No. 4 Kendon, Midway-Sunset, Kern	35-32-23	2,346	pump 290 b.d.
Victor Oil, No. 14 Midway-Sunset, Kern	35-32-23	2,120	O.S. drlg.
Ethel D. Oil, No. 21-A Midway-Sunset, Kern	36-12-24	1,236	pump 10 b.d.
National Oil, No. 17 Midway-Sunset, Kern	35-32-23	1,136	sd. sh. drlg.
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	6,497	gr. sd. drlg.
Texas Co., No. 25 Midway-Sunset, Kern	32-32-24	3,130	pump 45 b.d.
Texas Co., No. 30 Midway-Sunset, Kern	32-32-24	3,242	cmtd. 3,100
Richfield Oil, No. 1-D-A, Elk Hills, Kern	1-31-24	2,953	sd. sh. drlg.
Ohio Oil, No. 2-D Tejon, Kern	23-11-19	5,875	sd. sh. drlg.
Petrol Corp., No. 1 Tejon, Kern	32-11-19	2,576	sd. sh. drlg.
Honolulu Oil, No. 33-1 SP, Tejon, Kern	33-12-19	6,586	sd. sh. drlg.
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	5,885	sd. sh. drlg.
Pure Oil, No. 1 Cantua, Fresno	31-18-17	10,213	form. test.
Union Oil, No. 1 Nicholson, Cantua, Fresno	17-15-15	5,871	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

West, Gulf Oil, No. 4 S.P.L. Cantua, Fresno	3-17-15	5,696	sd. sh. drlg.
Superior Oil, No. 1 C.U.P., Fresno	20-16-13	2,398	sd. sh. drlg.
Dauphin Dev., No. 1 Alcade, Fresno	30-21-14	3,586	tested wet.
Jacalitos Oil, No. 1 Jacalitos, Fresno	14-21-15	5,798	fsg. D.P.
Pet. Sec., No. 2 Gatchell, Jacalitos, Fresno	18-20-16	3,898	sd. sh. drlg.
Grimes, F. C., No. 1 Coalinga, Fresno	12-20-15	548	sd. sh. drlg.
Central Valley Oil, No. 1 Joaquin, Fresno	1-12-20	477	gr. sd. drlg.
K. N. D. A., No. 4-18-J Kettleman North, Fresno	18-21-17	11,746	P.B. 10,810
K. N. D. A., No. 67-20-J Kettleman North, Fresno	20-21-17	8,815	sd. sh drlg.
K. N. D. A., No. 72-4-P Kettleman North, Fresno	4-22-17	6,296	br. sh. drlg.
K. N. D. A., No. 83-4-P Kettleman North, Fresno	4-22-17	8,500	cleaning out
K. N. D. A., No. 27-12-P Kettleman North, Kings	12-22-17	8,060	flow 1,230 b.d.
K. N. D. A., No. 38-12-P Kettleman North, Kings	12-22-17	8,080	reaming
K. N. D. A., No. 6-6-Q Kettleman North, Kings	6-22-18	8,690	P.B. 8,189
K. N. D. A., No. 27-6-Q Kettleman North, Kings	6-22-18	9,065	P.B. 8,190
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	9,575	hd. sd. drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings	11-22-17	7,850	recmtd. 7,695
Standard Oil, No. 76-1-P Kettleman North, Kings	1-22-17	8,315	hd. sd. drlg.
Standard Oil, No. 87-1-P Kettleman North, Kings	1-22-17	1,998	sd. sh. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	6,560	hd. sh. drlg.
Standard Oil, No. 41-7-Q Kettleman North, Kings	7-22-18	5,291	sd. sh. drlg.
Superior Oil, No. 5 Huffman, Kettleman N., Fresno	29-21-17	10,475	cmtd. fsg.
Union Oil, No. 1 King, Kettleman North, Fresno	29-21-17	8-310	cleaning out
Bandini Pet., No. 5 Whepley, Kettleman N., Fresno	35-21-17	9,050	sd. sh. drlg.
Friend, C. C., No. 1 Tulare Lake, Kings	17-22-19	433	sd. sh. drlg.
Amerada Pet., No. 1 Carano, Los Banos, Merced	19-10-11	7,891	gr. sd. drlg.
Standard Oil, No. 2 Weyl, McDonald Is., San Joaquin	25- 2- 4	7,685	gr. sd. drlg.
Standard Oil, No. 1 Morris, Delano, Tulare	36-24-23	11,460	fsg. D.P.
Wilshire Oil, No. 1 Half Moon Bay, San Mateo	20- 6- 5	6,448	sd. sh. drlg.
Ohio Oil, No. 1 Willard, Glenn	18-20- 2	4,505	blow. gas

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Richfield Oil, No. 2-M, El Segundo, Los Angeles	12- 3-15	7,354	flow 850 b.d.
Richfield Oil, No. 1-H El Segundo, Los Angeles	18- 3-14	7,617	sd. sh. drlg.
Apex Pet., No. 1-C El Segundo, Los Angeles	12- 3-15	6,498	sd. sh. drlg.
The Termo, No. 2 El Segundo, Los Angeles	12- 3-15	5,975	sd. sh. drlg.
Ohio Oil, No. 11 Gough, El Segundo, Los Angeles	7- 3-14	3,976	sd. sh. drlg.
Texas Co., No. 6 Security, El Segundo, Los Angeles	18- 3-14	7,286	sd. sh. drlg.
Standard Oil, No. 7 Ref., El Segundo, Los Angeles	13- 3-15	7,147	tested wet
Standard Oil, No. 8 Ref., El Segundo, Los Angeles	13- 3-15	5,364	sd. sh. drlg.
Howard Oil, No. 1 El Segundo, Los Angeles	12- 3-15	7,605	sd. sh. drlg.
Lakeside Oil, No. 10-1 Elsie, El Segundo, Los Angeles	12- 3-15	7,400	testing
Wilshire Oil, No. 1 Const., El Segundo, Los Angeles	12- 3-15	5,285	sd. sh. drlg.
Wilshire Oil, No. 2-1 Elsie, El Segundo, Los Angeles	12- 3-15	6,998	sd. sh. drlg.
Wilshire Oil, No. 2 Sec., El Segundo, Los Angeles	12- 3-15	7,000	sd. sh. drlg.
Union Oil, No. 16-D. R., Playa Del Rey, Los Angeles	28- 2-15	6,099	redrlg. 5,161
Standard Oil, No. 84 LAI Inglewood, Los Angeles	17- 2-14	4,175	sd. sh. drlg.
Patton, C. B., No. 2 Torrance, Los Angeles	16- 6-14	3,747	redrlg. 3,650
Anderson, N. H., No. 2 Torrance, Los Angeles	16- 6-14	3,840	will deepen
Peyton, D. F., No. 1 Torrance, Los Angeles	16- 6-14	3,800	cleaning out
Woolner Oil, No. 5 Torrance, Los Angeles	16- 6-14	3,730	will deepen
Richfield Oil, No. 6-L Torrance, Los Angeles	16- 6-14	3,792	rigging up
Albertson Oil, No. 1-P Torrance, Los Angeles	16- 6-14	3,800	redrlg. 3,695
Grubb, E. H., No. 2 Torrance, Los Angeles	16- 6-14	3,701	cleaning out
Kelly, F. C., No. 1 fee, Torrance, Los Angeles	16- 6-14	4,300	redrlg. 3,890
Jameson Oil, No. 1 Wash, Torrance, Los Angeles	16- 6-14	3,863	cleaning out
Rolling Hills Pet., No. 1 Palos Verdes, Los Angeles	27- 4-14	2,860	sd. sh. drlg.
Tide Water A. O., No. 15 D. F. Dominguez, L. Angeles	34- 3-13	4,365	pump water
Shell Oil, No. 18 Reyes, Dominguez, Los Angeles	33- 3-13	4,244	redrlg. 4,110
Shell Oil, No. 93 Reyes, Dominguez, Los Angeles	33- 3-13	5,970	sd. sh. drlg.
Union Oil, No. 49 Heliman, Dominguez, Los Angeles	33- 3-13	6,376	sd. sh. drlg.
Union Oil, No. 57 Callender, Dominguez, L. Angeles	33- 3-13	7,790	cleaning out
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	2,991	sd. sh. drlg.
Selbar Oil, No. 1 Harris, Dominguez, Los Angeles	33- 3-13	4,388	cmtd. 4,340
Barnsdall Oil, No. 19 O'Dea, Rosecrans, L. Angeles	18- 3-13	7,075	sd. sh. drlg.
Union Oil, No. 35 H. P. Rosecrans, Los Angeles	18- 3-13	10,277	sd. sh. drlg.
Union Oil, No. 18-R, Rosecrans, Los Angeles	18- 3-13	4,895	sd. sh. drlg.
Texas Co., No. 5-1 Gardena, Los Angeles	30- 3-13	6,275	sd. sh. drlg.
Barnsdall Oil, No. 2-S.F., Newhall, Los Angeles	26- 4-17	6,461	hd. sd. drlg.
Towsley Canyon Oil, No. 1 Newhall, Los Angeles	8- 3-16	4,274	sd. sh. drlg.
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8- 4-17	366	cleaning out
General Pet., No. 1 Blinn, Wilmington, Los Angeles	3- 4-13	3,464	pump 200 b.d.
General Pet., No. 1 Harbor, Wilmington, Los Angeles	3- 5-13	3,940	O.S. drlg.
General Pet., No. 6 Harbor, Wilmington, Los Angeles	2- 5-13	4,049	P.B. 4,003
General Pet., No. 11-T Wilmington, Los Angeles	4- 5-13	2,879	pump 50 b.d.
General Pet., No. 3-C Wilmington, Los Angeles	2- 5-13	3,190	flow 250 b.d.
General Pet., No. 2-S.P. Wilmington, Los Angeles	2- 5-13	3,970	O.S. drlg.
Allied Pet., No. 23 Wilmington, Los Angeles	32- 4-13	3,225	P.B. 2,990
Bankline Oil, No. 4-C.Y., Wilmington, Los Angeles	34- 4-13	3,207	sd. sh. drlg.
Bankline Oil, No. 4-W Wilmington, Los Angeles	34- 4-13	3,608	pump 165 b.d.
Bankline Oil, No. 2-U.P., Wilmington, Los Angeles	3- 5-13	2,950	sd. sh. drlg.
Bankline Oil, No. 4-U.P., Wilmington, Los Angeles	3- 5-13	1,996	sd. sh. drlg.
Baker Oil, No. 1 Wilmington, Los Angeles	36- 4-13	3,078	cmtd. 3,077
Black Gold, No. 5 Wilmington, Los Angeles	32- 4-13	3,530	O.S. drlg.
Black Gold, No. 7 Wilmington, Los Angeles	32- 4-13	3,060	C.P. 1,015
Caminol Co., No. 1-6-H, Wilmington, Los Angeles	2- 5-15	2,476	sd. sh. drlg.
Colter & McAdoo, No. 4 Wilmington, Los Angeles	33- 4-13	2,554	sd. sh. drlg.
Hancock Oil, No. 1-A Wilmington, Los Angeles	2- 5-13	2,400	sd. sh. drlg.
Lokern Dev., No. 1-B Wilmington, Los Angeles	33- 4-13	3,540	O.S. drlg.
L. B. Harbor Oil, No. 1-C, Wilmington, Los Angeles	2- 5-13	2,075	sd. sh. drlg.
Macson Oil, No. 2-C, Wilmington, Los Angeles	32- 4-13	3,638	fsg. tubing
Pongratz, Gus, No. 1-G, Wilmington, Los Angeles	32- 4-13	3,649	completing
Pongratz, Gus, No. 1-A Wilmington, Los Angeles	32- 4-13	3,310	O.S. drlg.
Royalty Serv., No. 1 K. Y., Wilmington, Los Angeles	33- 4-13	3,619	flow 215 b.d.
Richfield Oil, No. 1-G Wilmington, Los Angeles	2- 5-13	3,000	sd. sh. drlg.
Richfield Oil, No. 1-R.G., Wilmington, Los Angeles	35- 4-13	3,169	O.S. drlg.
Seiegna Drlg., No. 14 Wilmington, Los Angeles	33- 4-13	3,588	completing
Superior Oil, No. 1-S.C., Wilmington, Los Angeles	4- 5-13	2,174	sd. sh. drlg.
Superior Oil, No. 1-C, Wilmington, Los Angeles	2- 5-13	4,028	P.B. 3,980
Superior Oil, No. 14-B.B., Wilmington, Los Angeles	4- 5-13	2,153	sd. sh. drlg.
Texas Co., No. 2 Ref., Wilmington, Los Angeles	32- 4-13	1,959	sd. sh. drlg.
Union Pacific R. R., No. 62 Wilmington, Los Angeles	33- 4-13	3,456	pump 192 b.d.
Union Pacific R. R., No. 75 Wilmington, Los Angeles	34- 4-13	1,297	sd. sh. drlg.
Union Pacific R. R., No. 76 Wilmington, Los Angeles	34- 4-13	3,165	flow 455 b.d.
Union Pacific R. R., No. 78 Wilmington, Los Angeles	3- 5-13	3,620	sd. sh. drlg.
Union Pacific R. R., No. 79 Wilmington, Los Angeles	34- 4-13	3,594	sd. sh. drlg.
Union Pacific R. R., No. 80 Wilmington, Los Angeles	34- 4-13	3,446	P.B. 3,199
Union Pacific R. R. No. 1-E Wilmington, Los Angeles	34- 4-13	2,990	sd. sh. drlg.
Union Pacific R. R., No. 2-E Wilmington, Los Angeles	34- 4-13	2,684	sd. sh. drlg.
Union Pacific R. R. No. 1-EU Wilmington, L. Angeles	34- 4-13	3,250	flow 545 b.d.
Wilton Oil, No. 3 Wilmington, Los Angeles	32- 4-13	3,202	O.S. drlg.
Ramsey, W. E., No. 1 Repetto Hills, Los Angeles	27- 1-12	3,507	idle
Texas Co., No. 18 Baldwin, Montebello, Los Angeles	5- 2-11	6,520	hd. sd. drlg.
Union Oil, No. 4 Flood Control, Los Angeles	13- 4-13	3,669	sd. sh. drlg.
Hilldon Oil, No. 3-A Flood Control, Los Angeles	13- 4-13	4,150	sd. sh. drlg.
Abrams, John, No. 1 Flood Control, Los Angeles	13- 4-13	4,247	cleaning out
Texas Co., No. 5 Bauman, Long Beach, Los Angeles	19- 4-12	3,847	sd. sh. drlg.
Texas Co., No. 4 Gray, Long Beach, Los Angeles	20- 4-12	4,481	sd. sh. drlg.
Power, E. D., No. 3 Long Beach, Los Angeles	20- 4-12	3,182	sd. sh. drlg.
Shell Oil, No. 1 Hath, Long Beach, Los Angeles	28- 4-12	6,102	sd. sh. drlg.
Rico Pet. Inc., No. 1 Long Beach, Los Angeles	30- 4-12	4,012	pump 115 b.d.
Richfield Oil, No. 19 Haas, Long Beach, Los Angeles	19- 4-12	3,025	pump 240 b.d.
Richfield Oil, No. 6-M-D. Long Beach, Los Angeles	19- 4-12	3,000	C.P. 2,835
Union Oil, No. 100 Santa Fe Springs, Los Angeles	6- 3-11	11,314	cleaning out
Continental Oil, No. 40 Bixby, Seal Beach, Orange	6- 3-11	6,803	pump 15 b.d.
Texas Co., No. 7-W Santa Fe Springs, Los Angeles	2- 5-12	7,501	redrlg. 6,050
Standard Oil, No. 34-A Huntington, Orange	34- 5-11	4,450	sd. sh. drlg.
W. P. R. Oil, No. 3 Huntington, Orange	35- 5-11	5,570	sd. sh. drlg.
Pressel & Tull, No. 1 Puente Hills, Orange	30- 2- 9	4,570	hd. sh. drlg.
Brea Canyon Oil, No. 36 Brea Canyon, Orange	2- 3-10	4,552	dry; abd.
Standard Oil, No. 127 Murphy, West Coyote, Orange	18- 3-10	3,240	cmtd. 3,224
Severns Drlg., No. 2 McNally, West Coyote, Orange	18- 3-10	7,272	redrlg. 4,360
Union Oil, No. 29 Chapman, Richfield, Orange	29- 3- 9	10,375	sd. sh. drlg.
Standard Oil, No. 2-26 Kraemer, Richfield, Orange	22- 3- 9	2,182	P.B. 1,785
Oil Income, No. 1 Anderson, Yorba, Orange	32- 3- 9	170	idle
Hjorth & Mohr, No. 1 Yorba, Orange	22- 3- 9	1,403	P.B. 1,340
Berco Oil, No. 1 Milhous, Yorba, Orange	22- 3- 9	1,750	bailing
Angelus Oil, No. 1 Jacobs, Yorba, Orange	22- 3- 9	1,691	idle
Fairfield, F. E., No. 1 Dutton, Yorba, Orange	22- 3- 9	1,641	sd. sh. drlg.
Oliver & Owen, No. 1 Moritz, Yorba, Orange	22- 4- 9	1,650	rig to pump
Shell Oil, Core Hole H., Yorba, Orange	16- 3- 9	2,957	dry; abd.
Selegna Oil, No. 1-A Chino, San Bernardino	12- 3- 8	2,194	sd. sh. drlg.

KANSAS

Week Ending January 22 (Descriptions are East unless marked otherwise)

Barber County

Helmerich & Payne No. 1 Winter, NW SW sec. 16-32-10w. Arb. 5,000-5,125 ft.; D. &A.

Kansas Oil Corp. No. 1 Mease, NE SE SE sec. 27-30-11w. Arb. 4,896-4,910 ft.; S.D.O.

Palmer Oil Corp. et al No. 1 Warwick, C NW sec. 29-31-10w. Rig.

Barton County

Elmer Ash et al No. 1 Frees, NW cor. sec. 34-16-11w. H.F.W. 3,444 ft.; D.&A.

R. E. Day et al No. 1 Feits, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.

Martin & Foraker et al No. 1 Dick Est., NE SW SW sec. 31-19-11w. Rig.

C. L. Price No. 1 Hammeke, NE NE SW sec. 12-18-12w. Sil. 3,415-27 ft.; 1,800 ft. O.I.H.; bails 4 bbls. wtr. every other day.

Sinclair Prairie Oil Co. No. 1 Oser, NE SE sec. 17-16-11w. Drlg. 3,015 ft.

Thayer Drlg. Co. et al No. 1 Soderstrom, SE NW sec. 21-17-13w. Pay 3,223 ft.; T.D. 3,267 ft.; swb. 12 B.O.P.H.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. S.D. 395 ft.

Steinbuchel et al No. 1 Fox, NW SE NE sec. 25-26-3e. S.D. 1,010 ft.

Chase County

T. D. Duffy No. 1 Leedy, NE NW NW sec. 26-22-9. Fsg. 635 ft.

Chautauqua County

Harrison No. 1 Brown, NE SE NE sec. 19-34-10. S.D. 520 ft.

I. W. Siegel No. 1 Temple, SW cor. sec. 31-32-12. S.D. 400 ft.

Clark County

Olson Oil Co. No. 1 Lenman, SE SW sec. 20-32-31w. Drlg. 5,100 ft.

Olson Oil Co. et al No. 1 Watkins, SW NW sec. 23-32-21w. Arb. 6,700-60 ft., T.D.; no show.

Cowley County

Dickey Oil Co. No. 1 Kansas G. & E., NE cor. sec. 22-34-3e. Bartlesville sd. 3,303-13 ft.; S.S.O.

Trees Oil Co. and Talbott No. 1 McMinn, NE NW sec. 16-31-6. Drlg. 1,550 ft.

Earl Wakefield No. 1 Whitson, SW NE SE sec. 8-32-4e. T.D. 3,294 ft.; P.B. 3,292 ft.; pmpd. 25 B.O. and 21 B.W. in 24 hrs.

Ellis County

C. L. Carlock No. 1 Heyle, SE NW sec 14-13-16w. Sil. 3,405 ft.; 6 B.W. 3,440 ft., T.D.; D.&A.

Colonial Oil Co. No. 1 Hadley, SE NE SE sec. 12-11-18w. Set 15-in. csg. 48 ft.; W.O.C. 128 ft.

Glimac Oil Co. et al No. 1 K. C. Life, SE SW NW sec. 5-11-18w. T.D. 3,373 ft.; pot. 922 B.O.

Hays & Sackrider No. 1 Windholtz, NE cor. sec. 2-13-16w. Drlg. 1,000 ft.

J. J. Muth et al No. 1 Penney, C N½ NE SE sec. 29-14-18w. S.D. 350 ft.

P. G. Reynolds et al No. 1 Karlin, NW cor. sec. 13-12-18w. Sil. 3,674-75 ft.; cmtd. 6-in. csg. 3,674 ft.; W.O.C.

Ellsworth County

Cities Service Oil Co. et al No. 1 Schroeder, C N½ N½ NW sec. 29-17-9w. Arb. 3,201-04 ft.; to set csg.

Colonial Oil Co. No. 1 Hogy, NW cor. sec. 16-16-10w. U.R. 10-in. 2,155 ft.

Ralph Wixson et al No. 1 Peterman, SW cor. sec. 28-17-10w. S.D. 1,920 ft.

Greenwood County

John Nichols et al No. 1 Central Life, SE SW sec. 35-25-12. Spd. and S.D.

Harvey County

National Ref. Co. No. 1 Brown Bros., NW SE NE sec. 22-23-2w. Drlg. 2,650 ft.

Jackson County

Lemmick Oil Co. No. 1 Marble Savings Bank, NE cor. sec. 26-9-14. Spd. and S.D.

Jewell County

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. Spd. and S.D.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. Drill pipe stuck 3,957 ft., T.D.

McPherson County

Archer & Crane No. 1 Templin, NW SW SE sec. 32-17-3w. S.D. 2,200 ft.

Bovie & Grossman No. 1 Diener, SE SE NE sec. 35-19-1w. Arb. 3,492-95 ft.; D. &A.

Carter Oil Co. No. 1 Hoglund, C W½ SW NW sec. 8-17-3w. Arb. 3,542-69 ft.; P.B. 3,373 ft.; acd.; pmpd. 88 B.O. and 16 B.W. in 8 hrs.

Meade County

Pacific Mid-West Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. S.D. 200 ft.; (cor.).

Ness County

Marshall Drlg. Co. et al No. 1 Anderson, SW NW sec. 23-16-24w. Spd. and S.D.

Trojan O. & G. Co. No. 1 Moses, C SW NW sec. 10-18-25w. S.D. 500 ft.

Trojan O. & G. Co. No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. Fsg. 3,285 ft.

Phillips County

C. W. Davidson et al No. 1 Elliff, SE NE NE sec. 35-5-18w. S.D. 600 ft.

Pratt County

Ohio Oil Co. No. 1 Howell, C SW SW sec. 21-29-15w. T.D. 4,929 ft.; D.&A.

Reno County

Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. Drlg. 2,980 ft.

McCole et al No. 1 Mathews, SW NW NW sec. 15-24-10w. Drlg.

Rice County

Joe Aylward No. 1 Welhe, SW NE sec. 23-18-9w. H.F.W. 3,667 ft., T.D.

Price et al No. 1 Gemeinhardt, NE SE sec. 18-18-10w. Drlg. 2,260 ft.

Skiles et al No. 1 Campbell, SE NE sec. 28-19-9w. T.D. 3,210 ft.; acd.; pot. 252 B.O.; U.R. 5-in. csg.

Western Kansas Oil No. 1 Bailey, SW NW sec. 19-20-6w. T.D. 3,732 ft.; rng. survey.

W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. Chat 3,346-55 ft.; small increase in oil.

Rooks County

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,326 ft. pmpd. 50 B.O. and 35 B.W. in 8 hrs.; S.D.O.

Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. C.O. 330 ft.

Rush County

Duwe & Brouk No. 1 Lebsack, SE SE NE sec. 13-16-16w. Sil. 3,492-95 ft.; 1,500 ft. sulfur water in hole in 2½ hrs.; T.D. 3,512 ft.; S.D.O.

Russell County

Emrichs et al No. 1 Anderson, NE SE SW sec. 33-15-11w. Spd. and S.D.

Hess et al No. 1 Reinhardt, NE SW sec. 36-12-14w. Drlg. 500 ft.

Phil-Han & Hinkle No. 1 Reinhardt, SE SW sec. 19-14-14w. Pay 3,242-46 ft., T.D.; pmpd. 1,095 B.O. in 26 hrs.

Shields et al No. 1 Rogg, NW SW sec. 28-14-13w. T.D. 2,922 ft.; pot. 1,635 B. O.; comp.

Winkler & Koch No. 1 Jones, SE SE NW sec. 22-14-13w. Sil. 3,180 ft.; S.D.O.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. Fsg. 1,550 ft.

McKnab No. 1 Garrett, SE SW SW sec. 18-29-2e. S.D. 100 ft.

I. W. Murfin et al No. 1 Martin, SE NW sec. 32-28-1e. T.D. 3,491 ft.; acd.; swb. 45 B.O. in 24 hrs.

Reeves & Kinnan No. 1 Helm, SW cor. sec. 5-29-3w. Arb. 4,317 ft.; T.D. 4,330 ft.; S.D.
Steinbuchel et al No. 1 McAdams, SW NE sec. 28-20-1e. Drlg. 2,000 ft.
Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. T.D. 2,400 ft.; S.D.

Stafford County

Carter Oil Co. No. 1 Andress, CNL SE sec. 2-21-13w. Drlg. 2,400 ft.
Cardinal Oil Co. et al No. 1 Sittner, SW cor. sec. 4-22-12w. Sat. 3,686-96 ft.; tstg.
Hippie et al No. 1 Moses, NW SW sec. 9-22-13w. H.F.W. 3,804-07 ft.; S.D.O.
Torry & Feaster et al No. 1 Heggy, NE SW sec. 26-23-11w. Set 7-in. csg. 3,696 ft.; T.D. 3,704 ft.

Sumner County

Cities Service Oil Co. No. 1 McCoy, SE SW sec. 11-35-2e. Drlg. 3,690 ft.
W. M. McKnab No. 1 Blair, SW cor. sec. 7-30-1e. T.D. 3,869 ft.; pot. 386 B.O.; comp.
Saco Oil Co. No. 1 Phipps, SW SE NE sec. 24-30-1w. Spd. and S.D.

Trego County

Carlock No. 1 Kinzel, SW SW sec. 9-13-22w. Spd. and S.D.

NEBRASKA WILDCATS

Arab Pet. Corp. et al No. 1 Ogle, SE SE sec. 9-1n-14e. Viola 3,019 ft.; Granite sec. 9-1n-14e, Richardson County, Viola 3,019 ft.; Gran. 3,423 ft., T.D.; S.D.O.

OKLAHOMA

Week Ending January 22

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 2,560 ft.

Caddo County

Indian Terr. Illum. Oil Co. No. 1 Dome-Bo, C NE SE sec. 29-6-10w. T.D. 6,900 ft.; S.D.O.

Cleveland County

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. Rig.
Harper-Turner No. 1 Pollock, C W½ NW NW sec. 13-9-2w. Drlg. 7,315 ft.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Garfield County

H. R. Hollenback et al No. 1 Clark, NW cor. sec. 34-21-6w. Drlg. below 7,214 ft.

Garvin County

B. C. D. Edwards No. 1 Clark, NE cor. sec. 16-3n-3e. T.D. 2,676 ft.; P.B. 2,088 ft.; perf.; swb. 6 bbls. fluid in 1 hr.; est. half wtr.

Grady County

Doyle Pet. Co. No. 1 Huffine, NW NW SE sec. 30-5-8w. Drlg.
Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. Drlg. sh. 10,030 ft.

Grant County

Magnolia Pet. Co. No. 1 Reynolds, NE NE SE sec. 19-25-5w. Drlg. 5,930 ft.

Greer County

R. W. McDonald No. 1 Fite, SE SE sec. 34-7-21w. Drlg. 420 ft.
J. I. Medlin et al No. 1 Broudie, NW cor. sec. 5-6n-20w. T.D. 90 ft.; (cor.); S.D.

Hughes County

Kenneth Ellison et al No. 1 Metropolitan, C NE NE sec. 14-7-9. T.D. 4,136 ft.; to set csg.
Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. Cg. below 5,870 ft.

Kay County

F. S. Freeland et al No. 1-A Watson, NE NW NW sec. 28-28-1w. Rig on ground.
Helmerich & Payne No. 1 Scott, SE SE NE sec. 20-28-1w. Arb. 3,706 ft.; T.D. 3,716 ft.; P.B.
E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kiowa County

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. T.D. 595 ft.; S.D.
Hughes & Reese No. 1 Fultz, SE cor. sec. 10-6-18w. T.D. 1,238 ft.; S.D.

Major County

Ed V. Parsons et al No. 1 Patzkowsky, C NW sec. 10-20-11w. Rig.

Okfuskee County

Broswood Oil Co. No. 1 Lehman, NW SW NW sec. 21-13-10. Drlg. 350 ft.
Mid-Continent Pet. Corp. No. 1 Inland, SW NE SW sec. 10-13-10. Wilcox 3,420 ft.; T.D. 3,427 ft.; R.U.S.T.

Okmulgee County

Phillips Pet. Co. No. 1 Wood, NW SW SW sec. 31-11-13. T.D. 3,209 ft.; trying to shut off wtr.

Osage County

Norbla Oil Co. and Carter Oil Co. No. 1 Osage, NW cor. sec. 3-24-6. Spd.

Pontotoc County

H. W. Lee No. 1 Weatherly, NW SE NW sec. 24-1n-7. Spd. and S.D.
Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. Spd.
H. Riddle et al No. 1 fee, NW SW SE sec. 11-3n-5e. Drlg. 3,000 ft.
Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. S.D. 3,320 ft.

Seminole County

H. V. Woodson and Marydun Oil Co. No. 1 Gilliland, SE SW sec. 24-11-7. Drlg. below 4,220 ft.

Texas County

Hagey et al No. 1 Peck, C NE sec. 6-1n-13ecm. T.D. 2,842 ft.; pulled csg. and set whipstock.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. Drlg. 1,925 ft.

SOUTHERN OKLAHOMA

Atoka County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Ridgway, NE cor. sec. 24-3s-9. Spd.
C. M. Sheldon and Gardner Pet. Co. No 1 Lee, NE NW SW sec. 2-4s-10e. U.R. 2,215 ft.

Bryan County

Southern Oil Co. No. 1 Henry, NW NW NE sec. 10-8s-7. Drlg. 1,690 ft.

Choctaw County

V. K. Chapman and T. N. Low No. 1 Hallum, NE NW NW sec. 4-7s-20. T.D. 340 ft.; fsg.
J. A. True No. 1 Boby, C NW SW sec. 17-7s-19e. T.D. 2,044 ft.; S.D.O.

Coal County

Carter Oil Co. No. 1 Claytor, C W½ NE SW sec. 27-2n-9e. T.D. 6,715 ft.; P.B. 6,482 ft.; tstd. 111 B.O. in 5 hrs.; tstg.

Cotton County

Bowers & Wise No. 1 Pendergraft, NW SE SW sec. 4-4s-12w. Spd. 16 ft.; S.D.

Jefferson County

Massad & Swansberger No. 1 Barrett, NE SE SE sec. 14-6s-6w. T.D. 1,890 ft.; S.D.

Johnston County

Patton et al No. 1 McCrummins, C SW SW NE sec. 16-1s-6e. S.D. 1,380 ft.
W. T. Sheldon No. 1 Chapman, C NW NW sec. 26-4s-6e. Drlg. 2,810 ft.

Marshall County

Paul Robb et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. O.W.D.D.; C.O. to 720 ft.; S.D.

Murray County

Meyer & Greenup No. 1 Arbuckle, NW NW NE sec. 18-2s-3e. Abd. loc.
Sinclair Prairie Oil Co. No. 1 Lancaster Trust, C SW NE sec. 10-1-2e. T.D. 4,404 ft.; freeing stuck pipe.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; P.B. 9,164 ft.; drlg. in new hole 8,934 ft.
Helmerich & Payne No. 1 Pfile, SW cor. sec. 1-2s-7w. Drlg. 4,050 ft.

Tillman County

Cavens et al No. 1 Southerland, SW SW NW sec. 35-4s-16w. T.D. 44 ft.; S.D.
Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. Drlg. 1,600 ft.
Tom Walker No. 1 Bowman, SW SW NW sec. 10-4s-17w. S.D. 200 ft.

ARKANSAS

Clark County

Coker Oil Corp. No. 1 Coke, NW sec. 14-10-20. T.D. 2,770 ft.; hd. rk.

Columbia County

Kerr-Lynn Oil Co. No. 1 Barnett, sec. 14-17-20. Drlg. 7,412 ft.
E. O. Olds No. 1 Dennis, NE SE SW sec. 4-17-21. S.D.; contr. denth 4,513 ft.:
Standard Oil Co. of La. No. 1 Bodcaw-Barbara, NE cor. SE NW sec. 18-16-22. R.U.

Crittendon County

Manning & Martin No. 1 Cartwright, SW cor. sec. 16-7n-8e. Drlg. 3,990 ft.

LaFayette County

Lillian Taubel et al No. 1 Tatum, NE cor. SE NW sec. 18-16-22. Drlg. 2,050 ft.

Little River County

Heenan & Coe No. 1 Waldrop, SE NW sec. 21-12-28. Drlg. 1,960 ft.

Joe G. Strahan et al No. 2 Dierks Lbr. Co. Drlg. 1,960 ft.

Miller County—Rodessa

R. Lacy No. 2 Grogan, E½ W½ sec. 15-20-28. Set surf. csg. 202 ft.; W.O.C.
R. H. Long No. 3 Greer, NE SE sec. 10-20-28. Set surf. csg. 162 ft.
McClanahan et al No. 1-C Capps, E½ W½ Fract. sec. 14-20-28. Set 7-in. csg. 5,957 ft.; T.D. 6,048 ft.; comp.; 325 B. P.D.; 1-in. ck.
McClanahan & Feazel No. 2 Eason, C N½ NW SW sec. 12-20-28. R.U.
R. W. Newell No. 1 Thomas, NW SE sec. 12-20-28. Drlg. 5,980 ft.
Nivia Oil Corp. No. 1 Cross, SE cor. SE NE sec. 11-20-28. T.D. 6,106 ft.; set 7-in. csg. 6,104 ft.; perf. 6,040-95 ft.; acid.; S.D.
J. R. Ostrom No. 1 J. O. Gerrald, NW E½ sec. 15-20-28. Comp.; 25 B.P.D.; gas-lift; T.D. 6,079 ft.
Roberts Bros. Drlg. Co. No. 1-B Capps, C sec. 10-20-28. Comp.; 40 B.P.H.; ½-in. ck.; 5½-in. at 6,099 ft.; T.D. 6,124 ft.
Skelly Oil Co. No. 2 Thomas, NE cor. E½ SW sec. 12-20-28. Rng. 7-in. csg.; porous L. 6,036-42 ft.
Mrs. S. O. Thompson No. 2 Green, SE cor. NE SE sec. 10-20-28. 13⅜-in. csg. 194 ft.; drlg. 3,850 ft.
Thompson & Jaffra No. 1 Treadway, SE NE sec. 10-20-28. Set 7-in. csg. 6,116 ft.; T.D. 6,145 ft.; comp.; 30 B.P.H.; 22/64-in. ck.
Thompson & Jaffra No. 1-A Treadway, NW cor. SE SE NE sec. 10-20-28. R.U.
Sam Tillingsworth No. 1 Treadway, SW cor. SE SE NE sec. 10-20-28. R.U.

Nevada County

Benedum & Trees Oil Co. No. 1 Mitchell, Set 7-in. csg. 2,145 ft.; T. D. 2,146 ft.; 200 ft. fluid in hole; comp.; pmp.; 50 B.P.D.; 1% S.W.
Union Products & Pet. Co. No. 4 Haynie, NW sec. 6-14-20. 6-in. csg. 1,192 ft.; sd.; S.O. 1,170-78 ft.; W.O.P.
Bruce E. Wallace No. 2 Haynie, SE cor. sec 5-14-21. S.D. wtr. 28 ft.

Ouachita County

Copenhaven Oil Corp. No. 1 Evans, NE cor. NE SW sec. 20-11-19. S.D. 1,825 ft.
A. H. Tarver et al No. 1 Dean Est., SW SE sec. 16-14-19. 7-in. csg. 1,305 ft.; T.D. 1,340 ft.; P.B. 1,304 ft.; drld. to 1,320 ft.; swbg.
O. F. Whittacker No. 2 Guttry, NW sec. 21-15-19w. Sd. 2,164-2,208 ft.; comp.; pmp. 12 B.P.D.; T.D. 2,208 ft.

Pulaski County

A. L. Kitselman, No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. Drlg. hd. bl. slate 2,038 ft.

Union County—Shuler

Ark. Southern Oil Corp. No. 2-A Simmons, SW cor. NE NW sec. 15-18-13. Drlg. 400 ft.
E. M. Jones No. 3 Marine Oil Co., NE NW SE sec. 17-18-17. Drk.
E. M. Jones et al No. 1-A Murphy Ld. Co. T.D. 6,351 ft.
Lion Oil Ref. Co. No. 2 Marine Oil Co., SW cor. E½ SE¼ sec. 17-18-17. Drk.
Lion Oil Ref. Co. No. 1 Miller, SW cor. NE NW sec. 18-18-17. R.U.
Lion Oil Ref. Co. No. 4-A Edna Morgan, NW cor. Lot 1, SW sec. 18-18-17. Drlg. 1,500 ft.
Lion Oil Ref. Co. No. 5-B Morgan, SE cor. W½ SE sec. 18-18-17. Drlg. 2,400 ft.
Lion Oil Ref. Co. No. 4-B Edna Morgan, NW SW SE sec. 18-18-17. Cg. 7,552 ft.
Marine Oil Co. No. 3 fee, SW sec. 17-18-17. T.D. 7,175 ft.; reset 9-in. csg. 520 ft.; W.O.C.
Marine Oil Co. No. 4 fee, NW cor. SW SW sec. 17-18-17. Set 16-in. csg. 125 ft.; W.O.C.
Marine Oil Co. No. 3 Justiss, NE cor. Lot 7, NW sec. 18-18-17. R.U.
Marine Oil Co. No. 4 Justiss, cen. Lot 7, NW sec. 18-18-17. Drlg. 3,363 ft.
Phillips Pet. Co. No. 1 First Natl. Bk., NE SW sec. 17-18-17. Drlg. 6,431 ft.
Phillips Pet. Co. No. 2 Justiss, NW sec. 18-18-17. Cg. 7,652 ft.
Phillips Pet. Co. No. 1 Marine Oil Co., NE cor. NW NE sec. 20-18-17. R.U.
Phillips Pet. Co. No. 2 Marks, SW sec. 18-18-17. T.D. 7,770 ft.; prep. set csg.
Phillips Pet. Co. No. 2 Rosen, SE cor. SW NE sec. 18-18-17. Drlg. 2,267 ft.
Alice Sydney Oil Co. No. 3 Morgan, NW NE SE sec. 18-18-17. Cg. 7,663 ft.
Alice Sydney Oil Co. No. 1 Powledge, SE cor. SW SE sec. 6,W.W.O.; old T.D. 6,005 ft.; prep. deepen.

Union County—Other

Penn-Ark. Pet. Corp. No. 1 Raulston, sec. 12-17-14. T.D. 3,175 ft.; S.D.; litigation.
W. D. Wingfield, Tr., No. 1 Kidd Est., C NE NW SE sec. 15-18-13. Drlg. 2,187 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

F. W. Burford No. 1 Brown, NE cor. SE sec. 5-23-16. Drk.
F. W. Burford No. 3 Terry, sec. 2-23-16. Set 7-in. csg. 5,983 ft.; T.D. 6,025 ft.
Clark Oil Corp. No. 1-C Sharp, sec. 4-23-16. Set 7-in. csg. 5,965 ft.; T.D. 6,045 ft.; swbg.
J. S. Rushing No. 1 Alexander, NW cor. sec. 3-23-16. R.U.
Standard Oil Co. of La. No. 1 Spearman, NE SE sec. 3-23-16. Drlg. anhy. 5,516 ft.
Standard Oil Co. of La. No. 2 Terry, sec. 2-23-16. Set 7-in. csg. 5,954 ft.; T.D. 5,995 ft.
Alice Sydney Oil Co. No. 1 Alexander, NW cor. sec. 2-23-16. Sd. 5,954-64 ft.; 7-in. csg. 5,947 ft.; T.D. 6,004 ft.; comp.; 11 B.P.H.; ¼-in. ck.; T.P. 250 lbs.; C.P. 600 lbs.
Union Prod. Co. No. 5 Harris, sec. 10-23-16. Set 7-in. 5,919 ft.; comp.; 491 B.P.D.; ¼-in. ck.; T.D. 5,959 ft.
Union Prod. Co. No. 6 Harris, sec. 10-23-16. Drlg. 5,151 ft.
Union Prod. Co. No. 7 Harris, NW cor. NE sec. 10-23-16. R.U.

N. LOUISIANA WILDCATS

Bienville Parish

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. T.D. 7,220 ft.; rmg. to bttm.

Bossier Parish

L. W. Dennis No. 1 Roos, SW NW NW sec. 13-19-12. Perf. 840-42 ft.; tstd. S.W.; arng. deepen 858 ft.
Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Drlg. 1,325 ft.
Union Prod. Co. No. 1-B Kerr Unit, SE sec. 24-17-12. Comp.; 40,000,000 ft. gas; R.P. 2,065 lbs.; T.D. 5,190 ft.

Caddo Parish

Anderson & Gilbert No. 1 Pittman, SE cor. SW sec. 14-19-14. R.U.
W. D. Chew No. 4 Spell, SE sec. 29-21-15. Set 6⅝-in. csg. 1,417 ft.; W.O.C.
Double "I" Oil Co. No. 1 Goodwin, NW cor. sec. 33-21-15. Set 6-in. csg. 1,410 ft.; W.O.S.R.; T.D. 1,630 ft.
W. D. Flynn No. 3 Natalie, SW cor. sec 10-21-16. T.D. 1,029 ft.; tstd. S.O. and some S.W.
W. H. Harrison, Jr., No. 3 Crystal Shoreline, SW cor. SW NW sec. 25-21-16. R.U.
Louisiana Oil Prod. Co. No. 3-D Muslow, SE cor. sec. 5-20-15. T.D. 2,207 ft.; W.O.
Louisiana Oil Prod. Co. No. 4-D Muslow, SE cor. sec. 5-20-15. Set 7-in. csg. 2,134 ft.; T.D. 2,196 ft.; W.O.S.R.
Louisiana Oil Prod. Co. No. 14-B Muslow, sec. 4-20-15. S.D. 2,130 ft.; high wtr.
La. Oil Prod. Co. No. 3-C Muslow, sec. 9-20-15. Set 7-in. csg. 2,136 ft.; T.D. 2,172 ft.; W.O.S.R.
Magnolia Pet. Co. No. 23 Dillon Hrs., NW cor. NE NE sec. 23-21-15. Drlg.
J. F. Mitchell No. 1 Muslow, NE cor. sec. 31-21-15. S.D.; repair rig 950 ft.
Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. R.U.
A. D. Robinson No. 1 Wilkinson, sec. 22-20-14. Cg. 2,559 ft.
J. E. Sedberry No. 1 Dickinson, NW sec. 15-19-14. Set 6-in. csg. 2,443 ft.; T.D. 2,443 ft.

Caldwell Parish

G. W. Ziegen No. 12 La. Cen. Lbr. Co., sec. 20-14-3e. R.U.

Catahoula Parish

G. C. Foster et al No. 1 Peck, S½ sec. 38-10-8e. Set 16-in. csg. 21 ft.; S.O.

Claiborne Parish

Atlantic Ref. Co. No. 2-B Bean, C S½ NW NE sec. 1-5-3E. Drlg. 4,333 ft.
Atlantic Ref. Co. No. 1-D Patton, C N½ SE SE sec. 29-21-4. Set 5⅛-in. csg. 5,227 ft.; T.D. 5,247 ft.; comp.; 56 B. P.H.; ¾-in. ck.
Atlantic Ref. Co. No. 2-D Patton, C S½ SE SE sec. 29-21-4. R.U.
T. L. James No. 2 Fowler, NE SW sec. 32-21-4. Set 10¾-in. csg. 730 ft.
J. R. McMurray No. 1 Bean, C N½ SE NW sec. 32-21-4. R.U.
Magnolia Pet. Co. No. 1 Fowler, C W½ NW SE sec. 28-21-4. Set 7-in. 5,193 ft.; T.D. 5,209 ft.
A. O. Olson et al No. 2 English, NE SE sec. 29-21-4. Drlg. 2,004 ft.
C. R. Schuster No. 1 S. Lloyd, SW SW sec. 2-20-5. T.D. 5,271 ft.; set 5½-in. csg.
Sloan & Zook No. 1 Aycock, SE sec. 1-20-5. Drlg. 400 ft.
Sloan & Zook No. 6 Patton Est., C W½ NE SW sec. 1-20-5. Set 10¾-in. csg. 873 ft.; drlg. 2,770 ft.
Union Prod. Co. No. 2 Brownfield, sec. 5-19-5. O.W.D.D.; cg. 9,000 ft.
Union Prod. Co. No. 1-A Kilpatrick, sec. 11-19-6. Drlg. 4,214 ft.
G. H. Vaughn No. 3 Enninger, C S½ NW SW sec. 29-21-4. Drlg. 4,520 ft.

De Soto Parish

Jal Drlg. Co. No. 10-A Scales, sec. 36-13-12. Set 5½-in. csg. 2,418 ft.; W.O.S.R.; T.D. 2,455 ft.
Pet. Heat & Power Co. No. 1 DeSoto Corp., SE cor. SW NW sec. 7-11-11. R.U.
Pet. Heat & Power Co. No. 1 Jal Drlg. Co., SW cor. SE NW sec. 7-11-11. R.U.
Pet. Heat & Power Co. No. 1 Matthews, sec. 29-12-11. R.U.
Pet. Heat & Power Co. No. 2 Matthews, sec. 30-12-11. R.U.

Pet. Heat & Power Co. No. 1 Taylor. NE cor. NE SE sec. 12-11-12. Drlg. 2,510 ft.
Pet. Heat & Power Co. No. 2 Taylor, sec. 12-11-12. Drk.

Franklin Parish

Southern Star Pet. Co. No. 2 Grayson. NE cor. NE SE sec. 36-12-6e. Set 10-in. csg. 145 ft.

La Salle Parish

Pet. Heat & Power Co. No. 1 Gaharan, Lot 7, Blk. 1, Holmes & Adams Addn., sec. 25-10-1e. Drk.
Stovall, Tr., No. 4 Russell, SE SE sec. 25-10-1e. 6-in. csg. at T.D. 1,518 ft.; W.O.S.R.

Lincoln Parish

F. H. Brown No. 1 Patton, C N½ SE SW sec. 6-20-4. Set 5½-in. csg. 5,356 ft.; T.D. 5,380 ft.; comp.; 65 B.P.H.; 1-in. ck.
F. H. Brown No. 2 Patton, C S½ SE SW sec. 6-20-4. R.U.
Delta Drlg. Co. No. 1 Weiss & Tatum, C S½ NW NE sec. 7-20-4. Set 10¾-in. csg. 716 ft.
Love Bros. No. 2 Patton Est., sec. 6-20-4. R.U.
Lyon & Neely No. 1-B Patton, SE SE sec. 6-20-4. Drlg. 3,977 ft.
Magnolia Pet. Co. No. 1 Pollack, C N½ NE SE sec. 6-20-4. R.U.
E. T. Oakes & Easton No. 1 Griggs, sec. 36-18-1w. Set 5½-in. csg. 6,259 ft.; Schlumberger survey showed sat. 6,231-40 ft.; set 5½-in. at 6,121 ft.; T.D. 6,259 ft.

Morehouse Parish

W. J. Furlong No. 1 Clark, sec. 10-20-7e. Drlg. 5,718 ft.

Red River Parish

Arkansas Fuel Co. No. 1 Frankland Realty Co., NW sec. 20-11-9. Drlg. 6,727 ft.
Glasscll & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. Set 13⅜-in. csg. 250 ft.
Yandell Rogers No. 5 Gaspair, SE SW sec. 27-13-11. S.D. 2,330 ft.

Sabine Parish

Hunter Co. No. 2 Long Bell Lbr. Co., C NE NE sec. 23-7-13. Set 6-in. csg. 2,226 ft.; tstd. dry 2,650 ft. and 2,679 ft.; to D.D.
W. L. Posey No. 1 Hale, C NE NW sec. 12-7-13. Set 6-in. csg. 2,160 ft.
Sutton-Zwolle Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w. Drlg. sh. 1,857 ft.

Tensas Parish

H. M. Jones No. 2 Chicago Mill & Ld. Co., NE SW sec. 31-12-10e. S.D. 750 ft.

Union Parish

Joe Modisett No. 1 Frost Lbr., sec. 14-21-1e. T.D. 7,005 ft.; S.D.

Webster Parish

S. W. L. Backus No. 4 Pardee Co., NE sec. 3-22-11. R.U.
H. L. Hunt Oil Co. No. 1 Hope, C SW NW sec. 24-21-10. Drlg. 4,850 ft.
C. E. Lunsford No. 1 Turner, SW cor. SE sec. 20-20-8. Drlg. sd. 895 ft.
Magnolia Pet. Co. No. 7 Marshall, SW SE sec. 21-21-10. Set 7-in. csg. 8,377 ft.; T.D. 8,405 ft.
Magnolia Pet. Co. No. 2 Mixon, sec. 22-21-10. Drlg. sh.&sd. 7,013 ft.
Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. Drlg. L.&sh. 5,716 ft.
North American Oil Co. and Root Pet. Co. No. 1 Covle, NE SW sec. 28-21-10. Drlg. 7,527 ft.
North American Oil Consol. Co. No. 1 Stewart, C SE NE sec. 32-27-10. Drlg. L.&sh. 4,685 ft.
Ohio Oil Co. No. 2 Bodcaw Acct. 4, SW SE NW sec. 24-21-10. Drlg. 7,411 ft.
Ohio Oil Co. No. 48 Bodcaw Acct. 2, SE sec. 15-21-10. Drlg. 7,621 ft.
Ohio Oil Co. No. 23 Gray Acct. No. 1, SE sec. 27-21-10. Drlg. 7,080 ft.
Ohio Oil Co. No. 2 Warren Cox, SE sec. 23-21-10. Set 7-in. csg. 8,110 ft.
A. G. Oliphant No. 2 Banks, C SE NW sec. 34-21-10. Drlg. 4,743 ft.
A. G. Oliphant No. 1 Central Inv. Co., C NW SE sec. 33-21-10. R.U.
A. G. Oliphant No. 1 Hodges, NW sec. 34-21-10. Top Holloway 5,650-62 ft.; comp.; 1,576 B.P.D.; ½-in. ck.; T.D. 5,672 ft.
A. G. Oliphant No. 1 Stewart, sec. 33-21-10. R.U.
Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. Drlg. 3,925 ft.
Union Prod. Co. No. 4 Miller, SE cor. SE sec. 28-21-10. Drlg. sh. 3,790 ft.
Woodley Pet. Co. No. 5-B M. E. Gray, sec. 27-21-10. Set 7-in. csg. 8,092 ft.; T.D. 8,142 ft.; comp.; 528 bbls. dist. and est. 5,000,000 ft. gas; ¼-in. ck.

Winn Parish

G. W. Ziegen No. 13 La. Cen. Lbr. Co., sec. 4-13-1e. 12-in. at 62 ft.; W.O.C.

SOUTH LOUISIANA FIELDS

Anse La Butte—St. Martin Parish

Crusader Oil Co. No. 2 Central Oil Co., sec. 86-9s-5e. Drk.
Austin B. Taglar No. 4 Begnaud, sec. 113-9s-5e. T.D. 1,970 ft.; 7-in. csg. 1,916 ft.; perf. csg. 1,693-98 ft.; showed dry gas; killed; will perf. 1,320-28 ft.; tstg.
Austin B. Taylor No. 5 Begnaud, sec. 117-9s-5e. T.D. 836 ft.; rng. csg.
Austin B. Taglar No. 1 Martin, sec. 71-13s-9e. T.D. 1,750 ft.; salt 5¼-in. csg. 1,750 ft.; swbd. S.W. and oil.

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 1 Schwing, sec 67-9s-11e. Top sd. show oil 6,827 ft.; T.D. 6,829 ft.; oil sd.; run csg. to test.

Bayou Cocotriz—Terrebonne Parish

Shell Pet. Corp. No. 4 Pelican, sec. 19-17s-15e. 10¾-in. csg. 2,452 ft.; T.D. 9,508 ft.; oil sd.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 St. Charles La Co., sec. 38-15s-20e. 10¾-in. csg. 2,695 ft.; top salt 9,255 ft.; T.D. 9,263 ft.; 7-in. csg. 7,200 ft.; Schlumberger shwd. 7¾ ohms, 130 millivolts; P.B. 6,940 ft.; perf. csg. 6,928-31 ft.; D.S.T. showed S.W.; slight gas show; squeezed off perf.; W.O.C.

Big Lake—Cameron Parish

Union Sulphur Co. No. 2 Miami Corp., sec. 19-12s-8w. R.U.

Black Bayou—Calcasieu Parish

Shell Pet. Corp. No. 39 Watkins. P.B. 4,594 ft.; perf. lnr. 4,575-90 ft.

Bosco—Acadia Parish

Superior Oil Co.-Pure Oil Co. No. 5 Larcade, sec. 35-8s-3e. T.D. 10,216 ft.; P.B sdtrkd.: T.D. 9,927 ft.; 9⅝-in. csg. 7,536 ft.; T.D. 10,326 ft.; P.B. 9,423 ft.; drlg. sh. 9,795 ft.

Edgerly—Calcasieu Parish

La. Crusader Oil Co. No. 1 La. Prairie, sec. 21-9s-11w. Drlg. sh. 4,330 ft.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 51 Sch. Ld., sec. 16-14s-13w. Drlg. sd. 3,315 ft.
Magnolia Pet. Co. No. 21 Cameron Meadows, sec. 21-14s-13w. 13⅜-in. csg. 1,173 ft.; 9⅝-in. csg. 4,080 ft.; P.B. 4,041 ft.; W.O.C.

Chenevville—Rapides Parish

Amerada Pet. Corp. No. 4 Weil, sec. 5-15-2e. T.D. 5,740 ft.; cd. oil sd. 5,632-70 ft., 5,725-37 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 1 Bourdreaux, sec. 21-13s-9e. R.U.
Pan American Prod. Co. No. 1 Eucer, sec. 11-13s-9e. Drlg. sh. 9,476 ft.
Pan American Prod. Co. No. 1-A Kern, sec. 21-13s-9e. R.U.
Pan American Prod. Co. No. 1 Parro, sec. 36-13s-9e. Drlg. sh. 8,437 ft.
Pan American Prod. Co. No. 1 Robichauv, sec. 11-13s-9e. Drlg. 829 ft.

Choctaw—Iberville Parish

Louisiana Crusader Oil Co. No. 1 E. B Schwing, sec. 20-8s-11e. Drlg. sh.&L. 8,799 ft.
Standard Oil Co. No. 8 Gay, sec. 52-9s-11e. T.D. 6,090 ft.; mixing mud.

Darrow—Ascension Parish

Kiva Oil Co. No. 1 Dunlessis, sec. 69-10s-2w. T.D. 60 ft.; S.D.
Humble O. & R. Co. No. 2 Landry, sec. 34-10s-2e. Drlg. sdy. sh. 2,335 ft.
Humble O. & R. Co. No. 1 Rose, sec. 33-10s-2e. 10¾-in. csg. 2,966 ft.; T.D. 6,940 ft.; 7-in. csg. 6,924 ft.; I.P. 730 B.P.D.; ¼-in. ck.

Dog Lake—Terrebonne Parish

Texas Co. No. 21 State, sec. 5-22s-16e. Drlg. sd.&sh. 5,846 ft.

Fausse Point—Iberia Parish

Texas Co. No. 4 State, sec. 35-11s-8e. 18⅝-in. csg. 90 ft.; drlg. sdy. sh. 6,386 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 9 L.L.&E., sec. 24-21s-16e. T.D. 8,553 ft.; P.B. 3,881 ft.; sdtrk.. T.D. 6,943 ft.; 9⅝-in. csg. 6,870 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 25 State, sec. 37-23s-33e. Top salt 6,111 ft.; 7-in. csg. 5,926 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 2 Mary McIvor, sec. 14-9s-8w. T.D. 7,165 ft.; 5-in. csg. 7,165 ft.; P.B. 7,142 ft.; set cmt. retainer; squeezed off perf.; perf. csg. 7,136-38 ft.; run screen and lnr.; flwd. oil; sanded up; S.D.
Union Sulphur Co. No. 6 Kaufman, sec. 13-9s-8w. Drlg. sh. 7,795 ft.

Hackberry—Cameron Parish

W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.
W. T. Burton No. 2 Porter Ellender, sec. 27-12s-10w. T.D. 4,640 ft.; perf. csg. 3,876-3,909 ft.; swbd. wash wtr.; abd.
Daryl Davis No. 1 Doiron, sec. 37-12s-10w. S.D. 40 ft.
F. J. LeBlanc No. 1 Doiron, sec. 36-12s-10w. Drlg. sd.&sh. 1,977 ft.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. Drlg. sh. 5,200 ft.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. T.D. 4,888 ft.; 7-in. csg. 4,876 ft.; drlg. sh. 5,200 ft.
Union Sulphur Co. No. 43 Watkins, sec. 24-12s-10w. T.D. 4,124 ft.; P.B. 2,385 ft.; drlg. sh. 3,510 ft.
York Oil Field Supply No. 3 Vincent, sec. 28-12s-10w. T.D. 2,947 ft.; milling on csg.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Ld. Co., sec. 37-17s-9e. Drive piling.

Iowa—Jeff Davis Parish

Magnolia No. 13 Wait, sec. 12-9s-7w. T.D. 4,435 ft.; R.U. to pmp.

Lockport-Cameron Parish

Magnolia Pet. Co. No. 35 Miller, sec. 9-10s-9w. T.D. 7,237 ft.; abd.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Teche Sugar Co. sec. 58-13s-8e. 7-in. csg. 9,884 ft.; drlg. sdy. sh. 10,087 ft.

Jennings—Acadia Parish

W. T. Burton No. 5 Roboria, sec. 42-9s-2w. T.D. 6,842 ft.; 7-in. csg. 6,335 ft.; tstg.
H. Postiades et al No. 1 Washington Opelousas, sec. 41-9s-2w. T.D. 6,890 ft.; well blew out; D.S. stuck.
Fred I. Getty No. 1 Jennings fee, sec. 46-9s-2w. Drlg. gbo. 1,690 ft.
Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. T.D. 4,840 ft.; conditioning hole.
Jolly Pet. Co. No. 2 McFarlain, sec. 41-9s-2w. Drk.; (corrected).
Jolly Pet. Co. No. 5 Jennings-Heywood, sec. 46-9s-2w. T.D. 2,040 ft.; I.P. 3 B. P.D.; 90 bbls. S.W.
Port City Oil Co. No. 21 Jennings-Heywood, sec. 41-9s-2w. T.D. 1,980 ft.; 6⅝-in. csg. 1,798 ft.
Reiter Foster Oil Co. No. 2 Crusel, sec. 42-9s-2w. T.D. 3,908 ft.; P.B. 3,146 ft.; S.D.
Rock Oil Co. No. 3 Gulf Martin, sec. 47-9s-2w. T.D. 2,020 ft.; P.B. 1,800 ft.
Shell Pet. Corp. No. 3 Community, sec. 40-9s-2w. Cg. shly. sd. 7,160 ft.
Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 6,448 ft.; P.B. 6,135 ft. to straighten hole.
Superior Oil Co. No. 1 Julis Clement, sec 46-9s-2w. T.D. 7,324 ft.; D.S. stuck; P. B. to sdtrk.; oil sd. 7,028-88 ft.
Superior Oil Co. No. 3 Iowa-Jennings, sec. 41-9s-2w. Drlg. sd. 5,403 ft.
Superior Oil Co. No. 5 Jennings-Heywood, sec. 41-9s-2w. T.D. 6,645 ft.; 7-in. csg. 6,645 ft.
Superior Oil Co. No. 9 Leckelt, sec. 42-9s-2w. Drlg. sh. 6,955 ft.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. Top salt 3,819 ft.; S.D. 3,938 ft.

Lafitte—Jefferson Parish

Texas Co. No. 9 Lafitte, sec. 20-17s-24e. T.D. 9,460 ft.; run Schlumberger.
Texas Co. No. 1 Marrero Land & Investment Co., sec. 20-17s-24e. 13⅜-in. csg. 1,937 ft.; drlg. sh. 9,497 ft.
Texas Co. No. 2 Marrero Ld. & Inv. Co., sec. 21-17s-24e. Drlg. sdy. sh. 3,643 ft.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 7 Lafourche, sec. 12-18s-25e. 7-in. csg. 8,074 ft.; T.D. 9,687 ft.; rmg. hole.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 2 State, sec. 65-17s-19e. R.U
Fohs Oil Co. No. 3 State, sec. 65-17s-19e. 10¾-in. csg. 2,743 ft.; T.D. 9,539 ft.; sd. 9,517-33 ft.; P.B. 9,464 ft.; perf. csg. 9,482 ft.; drlg. sh. 10,761 ft.

Leesville—Plaquemines Parish

Texas Co. No. 63 Leesville, sec. 27-12s-22e Drlg. sdy. sh. 4,954 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Frank Wurzlow, sec. 6-19s-19e. 13⅜-in. csg. 2,796 ft.; cored sd. and sh. show. oil 8,215-25 ft.; T.D. 9,027 ft.; run 7-in. csg. 70 ft. well tried to blow out after drlg. plug; drlg. sd.; no show.

New Iberia—Iberia Parish

Wm. Heilis No. 4 Gulf Land, sec. 52-12s-7e. T.D. 4,798 ft.; 7-in. csg. 4,798 ft.; I.P. 139 bbls. in 24 hrs.; sanded up; cutting and pulling screen.
Wm. Heilis No. 10 Bernard, sec. 54-12s-7e. R.U.
Texas Co. No. 3 Bryant, sec. 25-12s-7e Cg. sd. 4,724 ft.
Texas Co. No. 1 Burke, sec. 56-12s-8e T.D. 7,383 ft.; sdtrkd.; T.D. 7,487 ft.; abd.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 Daly, sec. 44-8s-1e. T.D. 7,686 ft.
Humble O. & R. Co. No. 2 Federal Ld. Bk., sec. 34-8s-1e. Drk.
Humble O. & R. Co. No. 2 Ohlenforst, sec. 34-8s-1e. Core sh. 8,100 ft.

Roanoke—Jeff Davis Parish

Humble O. & R. Co. No. 5 Taylor, sec. 12-9s-4w. Cg. sd. 8,983 ft.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 L. L. Barnard et al. sec. 16-10s-4e. 10¾-in. csg. 1,070 ft. W.O.C.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp No. 3-B Calcasieu Natl. Bank, sec. 27-7s-3w. T.D. 9,154 ft.; rmg. hole.

Starks—Calcasieu Parish

Capital Oil Co. No. 1 Lutcher-Moore, sec. 24-9s-13w. R.U.
Lutcher Moore No. 3 fee, sec. 19-8s-12w T.D. 4,361 ft.; 6⅝-in. csg. 4,351 ft.; drld. deeper; T.D. 4,367 ft.; R.U. to pmp.
J. R. Turnbull et al No. 3 Industrial Lbr. Co., sec. 19-9s-12w. T.D. 2,400 ft.; 7-in. csg. 2,378 ft.; D.D.; top cap rock 2,480 ft.; S.D.; T.D. 2,510 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 852 fee, sec. 29-9s-10w. T.D. 5,068 ft.; P.B. and sdtrkd.; drlg. sh. 3,220 ft.
Union Sulphur Co. No. 855 fee, sec. 20-9s-10w. T.D. 4,272 ft.; 7-in. csg. 4,239 ft.; I.P. 127 B.P.D.; ¾-in. ck.

Tepetate-Acadia Parish

Continental Oil Co. No. 4-D Homeseekers Dev. Co., sec. 34. T.D. 8,313 ft.; pulling scrn. and lnr.; to reset; condtng. hole.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 1-B Community, sec. 58-17s-20e. R.U.
Pan American Prod. Co. No. 15 Harang, sec. 5-17s-20e. Drlg. sh. 4,914 ft.
Pan American Prod. Co. No. 16 Harang, sec. 7-17s-20e. Drlg. sh. 2,212 ft.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 5 Manhattan Frun Co., sec. 26-26s-30e. Drlg. 2,830 ft.

Vinton—Calcasieu Parish

Katina Oil Co. No. 2 Vincent, sec. 34-10s-12w. T.D. 4,303 ft.; P.B. 3,227 ft.; swbd. oil and S.W.; S.D.
M. McLean No. 17 Gray, sec. 35-10s-12w. R.U.
J. V. Redick No. 1 Vincent, sec. 34-10s-12w. Drlg. sdy. sh. 2,268 ft.
Superior Oil Co. No. 2 Gray, sec. 4-11s-12w. T.D. 4,350 ft.; abd.
Sutton-Burton No. 1 Calcasieu Natl. Bk., sec. 3-11s-12w. T.D. 4,500 ft.; S.D.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 La. Ld. Improvement Co., sec. 46-3s-2e. 18⅝-in. csg. 247 ft.; drlg. sdy. sh.&L. 8,338 ft.

Welsh—Jeff Davis Parish

Stanolind O. & G. Co. No. 1 W. B. Conover, sec. 20-9s-5w. Drlg. 127 ft.

White Castle—Iberville Parish

T. D. Humphray No. 1 E. B. Adams, sec. 1-11s-12e. S.D. 6,067 ft.; P.B. and sdrkd.: T.D. 8,840 ft.; prep. to abd.
Shell Pet. Corp. No. 11 Wilbert. P.B. 6,950 ft.; perf. 6,570-80 ft.; tstg.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft.; T.D. 3,925 ft.; D.S. stuck.
Gulf Oil Corp. No. 1 Euclia Broussard, sec. 49-10s-2w. 7-in. csg. 9,672 ft.; T.D. 9,955 ft.; D.S. stuck.
Humble O. & R. Co. No. 1 Finch, sec. 22-10s-1e. R.U.

Calcasieu Parish

Republic Prod. Co. No. 1 Sabine Tram. Co., sec. 25-18s-14w. 10¾-in. csg. 1,981 ft.; T.D. 9,620 ft.; hole clean; S.D.; high wtr.
Shell Pet. Corp. No. 1 Calcasieu Natl. Bk., sec. 18-11s-10w. Drlg. 1,236 ft.
Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; W.O.C.

Cameron Parish

Humble O. & R. Co. No. 1 Miami Corp., sec. 8-14s-5w. 20-in. pipe set 188 ft.; 9⅝-in. csg. 7,100 ft.; T.D. 10,177 ft.; D.S. stuck; P.B. 8,155 ft.; D.S. stuck in second sdtrkd. hole 7,849 ft.; abd.
Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. R.U.

Cameron Parish—Gulf of Mexico

Superior Oil Prod. Co. et al No. 1 State-Gulf of Mexico, 3,800 ft. W. 6,200 ft. S of SE cor. of irregular sec. 4-15s-8w. 10¾-in. csg. 1,157 ft.; T.D. 7,166 ft.; 7⅝-in. csg. 7,166 ft.; drlg. sh. 8,942 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Elliott, sec. 3-9s-2e. T.D. 7,678 ft.; S.D.

Evangeline Parish

Schlicher Prod. Co. No. 2 Ledenois, sec. 35-3s-1w. 10¾-in. csg. 256 ft.; drlg. sh. 2,880 ft.

Iberia Parish

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd. at 5,788 ft.; drlg. sdy. sh. 7,020 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 125-12s-11e. T.D. 3,752 ft.; D.S. stuck.

Jefferson Davis Parish

Continental Oil Co. No. 1 Fave, sec. 31-10s-3w. 10¾-in. csg. 1,999 ft.; T.D. 10,935 ft.; well blew out; stuck D.S.; abd.
Union Sulphur Co. No. 1 Calcasieu National Bank, sec. 12-9s-6w. T.D. 8,524 ft.; 7-in. csg. cmtd. 8,524 ft.; P.B. T.D. 8,310 ft.; tstd. S.W. through perforations 8,292-95 ft.; perf. csg. 8,276-81 ft.; I.P. 46 bbls. distl. per day through 29/64-in. ck. on tbg. and 12/64-in. bttm-hole ck.; killed well; squeezed off perf. 8,284-86 ft.

Lafourche Parish

Amerada Pet. Corp. No. 1 South Coast Corp., sec. 34-15s-19e. T.D. 8,745 ft.; 9⅝-in. csg. 7,636 ft.; cored O.S. 10,209-14 ft.; cored 10,219-24 ft.; recovered 3 ft. O.S., 2 ft. S.W. sd.; T.D. 10,314 ft.; 7-in. csg. 9,003 ft.; 5-in. csg. 10,262 ft.; drlg. plug.
Gulf Oil Corp. No. 3 State (P.P.), sec. 35-23-21. T.D. 8,728 ft.; salt; P.B. to perf. csg.; perf. csg. 6,935-62 ft.; flwd. P.L. O.; sanded up; swbg.; cutting and pulling screen.

Pointe Coupe Parish

Batchelor Oil Co. No. 1 Hackney, sec. 28-3s-8e. Drk.

St. James Parish

Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. R.U.

St. Martin Parish

Shell Pet. Corp. No. 1 Fredericks, sec. 38-8s-5e. T.D. 9,500 ft.
Shell Pet. Corp. No. 1 Unit, sec. 11-14s-12e. Cg. sdy. sh. 6,975 ft.
Texas Co. No. 4 State Lake Mongoulois, sec. 14-10s-9e. Drlg. sh. 5,244 ft.

Terrebonne Parish

Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. Bldg. drk.
Fohs Oil Co. No. 1 State, sec. 41-19s-19e. R.U.

TEXAS

Week Ending January 22

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 3 Gibson, J. W. Hall Sur. Drk.
Gulf Ref. Co. No. 3 Reiss, J. W. Hall Sur. T.D. 6,368 ft.; 7-in. csg. 6,368 ft.; S.G. &S.W.; P.B. 6,344 ft.; tstg.
Shell Pet. Corp. No. 4-B Ramsey, J. W. Hall Sur. Drlg. sd. 5,324 ft.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 5 Alexander, H.T.&B. Sur. No. 28. T.D. 5,900 ft.; rng. Schlumberger.
Humble O. & R. Co. No. 1 Hortsman, H.T.&B. Sur. No. 37. Drk.
Humble O. & R. Co. No. 1 M. Lerew, H.T.&B. Sur. No. 38. Drlg. sh. 1,257 ft.
Humble O. & R. Co. No. 6 W. G. McDeed, H.T.&B. Sur. No. 30. Drk.
Humble O. & R. Co. No. 9 South Texas Grain Co., Perry and Austin Sur. Drlg. sh. 3,700 ft.
Senisa Oil Co. et al No. 1 B. Steiner & Blummer, H.T.&B. Sur. No. 28. Cd. oil sd. 6,096 ft.
Stanolind O. & G. Co. No. 7 R. L. Autrey, H.T.&B. Sur. No. 37. Drk.
Stanolind O. & G. Co. No. 7 T. C. Edwards, Wm. Henry Sur. T.D. 6,080 ft.; tstg.
Stanolind O. & G. Co. No. 1 Geo. Liverman, H.T.&B. Sur. No. 28. Drlg. sh. &L. 4,637 ft.
Stanolind O. & G. Co. No. 1 C. W. Massey, H.T.&B. Sur. No. 37. R.U.
Stanolind O. & G. Co. No. 3 H. M. Shyrock, H.T.&B. Sur. No. 29. Drk.
Sam E. Wilson No. 1 E. D. Mills, I.& G.N. Sur. No. 23. T.D. 6,521 ft.; abd.

Old Ocean—Brazoria County

Harrison & Abercrombie Oil Co. No. 1 Troyer and West Texas Abst. Co., C. Breen Sur. R.U.

West Columbia—Brazoria County

Frost and Dunnan No. 1 E. S. Parker, Geo. Tennille Sur. Loc.
Sterling Oil & Ref. Co. No. 1 Powers et al, Geo. Tennille Sur. Drlg. sh. 3,986 ft.
Texas Co.-Sterling O. & R. Co. No. 6 Phillips, G. Tennille Sur. Drlg. sh. 4,-212 ft.
Texas Co. No. 1 T. Robinson. George Tennille Sur. Drlg. sh. 4,036 ft.
Texas Co No 3 Smith, G. Tennille Sur. Drlg. sh. 5,512 ft.

Calhoun—Heyser—Victoria County

Blanco Oil Co. and Buchanan No. 4 C. S. Dunnwoody, A. Sisneros Sur. Drlg. 5,-010 ft.
Blanco Oil Co. et al No. 7 C. S. Dunwoody, A. Sisneros Sur. R.U.
Geo. Echols No. 4 Lander, J. Galban Sur. R.U.
Gulf Oil Corp. No. 2 L. P. Schultz, J. E. Galban Sur. Bldg. drk.
Gulf Ref. Co. No. 2-B Traylor, J. E. Galban Sur. Drlg. oil sd. 5,736 ft.
Humble O. & R. Co. No. 18-B P. H. Welder, A. Sisneros Sur. R.U.
Humble O. & R. Co. No. 21-A P. H. Welder, J. M. Rios Sur. Drk.
Sinclair Prairie Oil Co. No. 8 W. H. Bennett, A. Sisneros Sur. Drlg. sh. 4,-212 ft.
Sun Oil Co. No. 5 Coffey, J. E. Galban Sur. T.D. 5,749 ft.; tstg.

Seabreeze—Chambers County

Sun Oil Co. No. 1 R. J. Barrow, A. Yarbo Sur. R.U.
Sun Oil Co. No. 1 Seabreeze Ld. Co., H.T.&B. Sur. 102. R.U.
Sun Oil Co. No. 1 J. T. White, sec. 118, H.T.&B. Sur. R.U.

Silsbee—Hardin County

Republic Prod. Co.-Houston Oil Co. No. 2 Ellery fee, J. Ellery Sur. R.U.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 Moody, Reel & Trobough Sur. T.D. 3,700 ft.; 5¾-in. csg. 3,669 ft.; perf. csg. 3,602-05 ft.; S.G. and S.W.; P.B. 3,225 ft.; W. O.C.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 Maggie L. Peters, W. K. Hamblin Sur., Abst. 317. Bldg. road.

Friendswood—Harris County

Humble O. & R. Co. No. 1 G. Durwood, Perry and Austin Sur. Bldg. drk.
Humble O. & R. Co. No. 1 Etta Gibson, Perry and Austin Sur. 10¾-in. csg. 1,063 ft.
Humble O. & R. Co. No. 2 E. A. Gray, Perry & Austin Sur. T.D. 6,063 ft.; oil sd.
Humble O. & R. Co. No. 1 Hoidale-Forster, Perry & Austin Sur. T.D. 6,-050 ft.; tstg.
Humble O. & R. Co. No. 1 J. L. Jones and E. A. Gray, Perry and Austin Sur. Drk.
Humble O. & R. Co. No. 1 Kiesling, T. Choate Sur. T.D. 6,052 ft.; tstg.
Humble O. & R. Co. No. 2 A. E. Keisling et al, T. Choate Sur. 10¾-in. csg. 1,015 ft.; T.D. 6,050 ft.; tstg.
Humble O. & R. Co. No. 1 Pierce, W. K. Smith Sur. T.D. 6,050 ft.; tstg.

Hitchcock—Galveston County

N. W. Hunter No. 2 M. Stewart, J. Spillman Sur. R.U.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 3-A Phelan, S. Stevers Sur. Crooked hole; P.B.; 13⅜-in. csg. 3,070 ft.

Hardin—Liberty County

Atlantic Ref. Co. No. 1 J. V. Cessna, H. B. Johnson Sur. Drk.
Atlantic Ref. Co. No. 1 Wm. McMurtry, H. B. Johnson Sur. Drlg. sh. 7,546 ft.
Atlantic Ref. Co. No. 1 Murphy, H. B. Johnson Sur. 10¾-in. csg. 1,981 ft.; T.D. 7,610 ft.; 7-in. csg. 7,591 ft.; perf. csg. 7,593-97 ft.; high gas-oil ratio; set cmt. retainer.
Jack Frazier No. 2 B. F. Hanchey, H. B. Johnson Sur. Run surf. csg.
Jack Frazier No. 1 W. McMurtry, H. B. Johnson Sur. R.U.
Gulf Oil Corp. No. 1 J. H. Cessna, H. B. Johnson Sur. R.U.
Halliburton Oil Prod. Co. No. 1 Hanchey, H. B. Johnson Sur. R.U.
Humble O. & R. Co. No. 1 Partlow, H. B. Johnson Sur. Drlg. sh. 3,237 ft.
Sun Oil Co. No. 1 Cessna, A. B. Hardin Sur. T.D. 7,544 ft.; flwg. dist.; may kill to W.O.
E. W. Wickes No. 1 Tullos, H. B. Johnson Sur. Cg. sdy. sh. 7,510 ft.

South Call—Newton County

Houston Oil Co. No. 3 Peavy Moore Lbr. Co., sec. 42, H.&T.C. Sur. Cg. sh. 6,-939 ft.

Bay City—Matagorda County

Hamman Expln. Co. No. 2 Thompson, E. Hall Sur. Drlg. 3,312 ft.
Pan American Prod. Co. No. 1 Richers, I.&G.N. Sur. X-3. R.U.

Buckeye—Matagorda County

United North & South Development Co. No. 1 G.B.M., Cotton Lge. 7-in. csg. 8,667 ft.; T.D. 10,500 ft.; hole cleaned; W.O.O.; P.B. to 7,300 ft. to sdtrk.

Palacios—Matagorda County

Atlantic Ref. Co. & McCarthy No. 3 Foley Ld. Co., L. Goodwin Sur. Cg. sh. 8,016 ft.

Orange—Orange County

J. M. Campbell No. 1 Scales, Wm. Dyson Sur. Loc.
Gulf Oil Corp. No. 1 Granger Wm. Dyson Sur. R.U.
Gulf Oil Corp. No. 1 Orange National Bk., Wm. Dyson Sur. Drlg. sd.&bldrs. 4,-899 ft.
Glenn H. McCarthy No. 2 Brown, S. M. Luce Sur. Drlg. sh. 5,610 ft.
Ryan and Thompson No. 1 Norwood, Wm. Dyson Sur. M.I.M.
Union Prod. Co. No. 2 Lutcher-Moore, Dryson Sur. T.D. 3,700 ft.; to straighten hole.

Segno—Polk County

Gulf Oil Corp. No. 2 Ragan, I.&G.N. Sur. 15. Drlg. sd.&sh. 5,386 ft.
Gulf Oil Corp. No. 9 Sarah Wing, I.& G.N. Sur. No. 15. R.U.

Spurger—Tyler County

Republic Prod. Co. No. 7 Hurd, N. Hurd Sur. Drlg. sh. 6,896 ft.

GULF COAST WILDCATS

Brazoria County

Pure Oil Co. No. 1 Smith, S. F. Austin Sur. T.D. 7,734 ft.; heaving sh.
Texas Co. No. 4 Freeport Suipnur Co., C. Arriola Sur. 10-in. csg. 1,214 ft.; T.D. 3,900 ft.; P.B. 2,564 ft.; sdtrkd.; T.D. 3,000 ft.; P.B. to sdtrk.; drlg. sd. 3,-412 ft.

Chambers County

A. A. Cameron et al No. 1 White, Solmon Brill Sur. R.U.
Leverne Decker et al No. 1 Broussard Trust, sec. 30, H.T.&C. Sur. R.U.
Standard Oil Co. of Texas and California Oil Co. No. 1 State Galveston Bay. Drlg. sh. 2,010 ft.

Colorado County

Coyle-Concord No. 1 Hancock-Broussard. Hill Duffner Sur. 10¾-in. csg. 1,098 ft.; drlg. sh. 3,467 ft.

Harris County

W. S. Howell No. 1 Root, A. McCormick Sur. Drlg. sh. 2,736 ft.

Jackson County

Magnolia Pet. Co. No. 1 West Ranch, R. Musquez Sur. Drlg. sh. 5,239 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. Drlg. sh. 4,010 ft.
Glenn McCarthy No. 1 J. E. Broussard, C. Hillbrand Sur. T.D. 7,732 ft.; recvd. 29 thribbles of oil, 4 thribbles of S.W. 7-in. csg. on bttm.; perf. csg. 7,730-32 ft.; rec. 1,750 ft. oil, 250 ft. S.W.; squeezed off perfs.; W.O.C.; perf. csg. 7,718-27 ft.; flwg. 6 bbls. fluid per hr., 40% brksh. wtr.; prep. to kill well and P.B. to shut off S.W.

Matagorda County

Pierce Estate No. 1 Pierce, I.&G.N. Sur. No. 7. T.D. 7,374 ft.; P.B.; cd. sd. in sdtrkd. hole 6,627 ft.; rmg. to test.
Vandeveer Sur. Drlg. sh. 9,056 ft.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W. Abbey Sur. R.U.

Waller County

C. W. Markel et al No. 1 Hall, B. B. Guerrgnd Sur. No. 261. R.U.

Wharton County

Strake Pet. Co. No. 1 Strunck, L. P. Jennings Sur. Drlg. sh. 8,769 ft.

S. W. TEXAS WILDCATS

Atascosa County

L. W. Steiren No. 1 Crawford, 4 mi. W of Anchorage. T.D. 3,880 ft.; prep. to P.B. and test Austin chalk.

Bastrop County

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur Top Austin Chalk with odor of oil 2,530 ft.; T.D. 2,514 ft.; 5½-in. csg. 2,443 ft. tstg.; showing some oil.
J. I. Collins No. 1 J. C. Lofton, A. J. Denson Sur. R.U.
Southern Cross Oil Co. No. 1 Smith, James B. Blalock Sur. S.D. 2,189 ft.

Bee County

H. E. Pressy No. 1 F. H. Pressy, C. Williams Sur. Drlg. sh. 227 ft.

Bexar County

R. W. Fair No. 1 San Antonio Subd., J. H. Pickens Sur. 10-in. csg. 40 ft.; cd. L.; oil show 1,150-90 ft.; 7-in. csg. 1,-140 ft.; bailed dry; treated with acid; run tbg.; may make small producer.
Hikok & Reynolds No. 1 Eivert, Thomas York Sur. S.D. 445 ft.
Chas. Persyn No. 1 fee, Wm. Lindsey Sur. Drlg. sh. 895 ft.

Caldwell County

Mac-Wag-Tree Oil Co. No. 1 Roberts, W. House Sur. Drlg. L. 2,400 ft.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irrig. Co. Sur. 30. Drk.

De Witt County

Caldaboard Corp. No. 2 Afflerbach, I. W. Criswell Sur. Drlg. sh. 2,640 ft.
F. A. Hines No. 1 Boothe, Jas. Swindel Sur. S.D. 141 ft.

Dimmitt County

Teas & Maryland Corp. No. 1 McKnight, Blk. 13, sec. 23. Base of Austin Chalk 5,201 ft.; top Georgetown L. 6,120 ft.; drlg. L. 6,230 ft.

Duval County

Adolph Devore No. 1 E. R. Hagist, Sur. 265. Drlg. sh. 400 ft.
Circle Oil Co. et al No. 1 Southland Life Ins. Co., Santos Flores Gr. No. 25. Core sh. 5,175 ft.
Gillespie & Sons No. 1 Hamilton, J. Poitevent Sur. No. 85. 10¾-in. csg. 101 ft.; W.O.C.
Frank Gravis No. 1 Megargal, J. Boyles Sur. R.U.
James Hougen No. 1 Patton, Sur. No. 148. T.D. 5,520 ft.; abd.
Magnolia Pet. Co. No. 1 A. Lopez, M Lopez Sur. No. 82. Drlg. sdy. L. 5,-986 ft.
Southwood Oil Co. No. 1 Nolen, P. Cabello Sur. and F. Thompson Sur. No. 106. M.I.M.

Edwards County

Amon G. Carter No. 1 Sweeten, SE¼ Blk. 2. Sur. 49. T.D. 5,111 ft.; 9-in. csg. 5,030 ft.; drlg. sh. 5,956 ft.
Dan Auld No. 1 Henderson, sec. 46, Blk. E. 7-in. csg. 1,865 ft.; S.D. 3,190 ft.
C. V. Lyman No. 1 Brown, Blk. 3. O.W. D.D.; drlg. sh. 5,130 ft.

Frio County

Pagenkopf & Jamieson No. 1 Houston Est., 2,254-ac. tr., J. Figuerroa Sur. S.O. 2,610-03 ft.; set csg. to test 7-in. at 2,480 ft.; swbg.; S.O.&G. and wash wtr.; T.D. 2,651 ft.; set csg.; P.B. 2,607 ft.; pmpg. 30 bbls. fluid per day, 60 per cent oil; fluid increasing; S.D.; will probably W.O.

Goliad County

Rual Swiger No. 1-B Wood, J. Shearn Sur. T.D. 5,048 ft.; S.W. sd.; oil sd. 5,044-48 ft.; perf. csg. 5,008-25 ft.; swbd. S.W.; set retainer 5,000 ft.; squeezed off perf.; reperf. csg. 5,009-14 ft.; recvd. 45 bbls. of oil; swbg.; pmpg. 5½ bbls. of oil per hr.; tstg.

Guadalupe County

Kreiger & Douglass No. 1 Oliver, R. Smith Sur. S.D. 2,363 ft.
E. H. Robertson No. 1 Neighbors, Hugh M. Swift Sur. T.D. 40 ft.

Hidalgo County

Atlantic Ref. Co. No. 1 American Rio Grande. 7-in. csg. 8,505 ft.; T.D. 9,104 ft.; 5-in. csg. on bttm.; perf. csg. 8,-998-9,005 ft.; flwg. 19 bbls. dist. per day; ⅝-in. ck.; tstg.

Jim Hogg County

W. L. Stephens et al No. 1 Grey, Simon De Hinojosa Gr. R.U.

Jim Wells County

H. M. Hill et al No. 1 Kuether, Lots 70 and 75, sec. 52, Haldeman Subd. S.D. 3,342 ft.
H. H. Howell et al No. 1 Goldapp, Jose Maria Garcia Sur. R.U.
Howell et al No. 1 Talbot, 181-ac. tr., Lavaca Gr. T.D. 6,012 ft.; P.B. 5,179 gas, some oil; reperf. csg. 3,317-22 ft.; swbg.; showing S.W.; squeezed off perf. 3,600-07 ft.; flwg. small amt. of gas; no ga.
Pan American Prod. Co.-Southern Minerals Corp. No. 1 Hawkins, San Diego De Abajo Gr. 10-in. csg. 525 ft.; drlg. sd. 5,020 ft.
Magnolia Pet. Co. No. 8 Seeligson, A. Rameriz Sur. Drlg. sh. 1,080 ft.
Rowan & Hope No. 1 Robert Adams, T.&N.O. Sur. No. 19. 13⅜-in. csg. 1,-155 ft.; W.O.C.

Karnes County

DeGraffe & Reele No. 1 Cochran, Daniel B. McConnell Sur. T.D. 1,401 ft.; S.D.

Kleberg County

Cinco Oil Co. No. 1 Kilam, Lot 8, Blk. 53, Kleberg Town & Imp. Co. Subd. S.D. 1,410 ft.
Magnolia Pet. Co. No. 1 Dietz, Gabriel Trevino Sur. 13⅜-in. csg. 1,220 ft.; drlg. sh. 6,227 ft.
Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528. Dredging canal.

LaSalle County

Ralph B. Reed No. 1 Yeager, Blk. 7, Sec. 8, Wallace Subd., Yeager ranch. S.D. 1,320 ft.

Lee County

Jas. E. Pederson No. 1 Turner, David Hudson Sur. S.O.&G. 6,140-80 ft.; sdtrkd. at 4,600 ft. and drld. to 6,132 ft.; S.O.&G.; set csg. 6,021 ft.; acdzg. with 20-bbl. load; when opened well flwd 20-bbl. head and went dead; swbd. oil and wtr.; acd.; pulling tbg. to rework and wtr.; acd.; S.D.
Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. S.D. 3,995 ft.

Live Oak County

James Chew No. 1 Alma McNeil, Alexander Parks Sur. Drlg. sh. 4,140 ft.
Harvey & Henderson No. 1 Nichols, Thomas Henry Sur. Drlg. sh. 1,230 ft.
Loma Oil Co. No. 1 Striddle. Drlg. sd. 1,167 ft.
Ray L. Martin No. 1 Adams, J. Buchanan Sur. S.D. 178 ft.
J. P. Payzor No. 1 San Antonio Joint Stock, J. J. Roberts No. 1 Mahone. R.U.
Ranco Oil Corp. No. 1 Cook Ranch sec. 3, J. Poitevent Sur. T.D. 5,314 ft.; abd.
V. G. Schimmel No. 1 West, sec. 59, Haas Sur. B.U.
L. W. Stiern No. 2 Longe, Thomas Adams Sur. Loc.

Milam County

Texedo Oil Co. No. 1 Graham, Charles Cronea Sur. Drlg. 175 ft.; no report.
Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. Drlg. 712 ft.

McMullen County

Cities Service Oil Co. No. 1 O. E. Morris, Maria Del Pillar Perieda Sur. R.U.
Covle & Bedwell No. 1 Two Rivers Rnch. Co., sec. 60. S.D. 650 ft.
Duncan Drlg. Co. No. 1 Martin Henry, sec. 6. S.D. 707 ft.
Mills Bennett Prod. Co. No. 2 Nueces Ld. & Cattle Co., Sur. No. 234. T.D. 1,520 ft.; abd.
Richardson & McCarthy No. 2 Martin, Sur. No. 7. S.D. 525 ft.
Rowan and Nichols No. 2 Rhodes, H.& ft.

Medina County

J. R. Trentman et al No. 1 Carle Merc. Co., V. A. Johnson Sur. Loc.

Nueces County

Renwar Oil Co. No. 1 C. McKenzie, B. S.&F. Sur. No. 419. Drlg. sd. 3,150 ft.
Renwar Oil Co. No. 1 Morgan, A.B.& M. Sur. 10¾-in. csg. 101 ft.
Richardson Pet. Co. No. 1 Chapman, sec. 43, Laureles Farm Tr. No. 43. Drlg. sh. 6,173 ft.; no report.
Rutherford Oil Corp. No. 1 L. A. Stewart, Denman Sur. Drlg. 610 ft.
Union Prod. Co. No. 1 Simmons, 1,000-ac. tr., Agua Dulce Gr. Cg. 8,270 ft.

Refugio County

Continental Oil Co. No. 1 Scott Hrs., Dona A. Reogas Sur. Drlg. 1,200 ft.
Hogan Oil Co. No. 1 Kelley, M. & A. Roache Sur. T.D. 6,437 ft.; P.B. 6,002 ft.; perf. csg. 5,992-6,006 ft.; flwd. 150 bbls. fluid per day, 15% oil, balance S.W.

San Patricio County

A. L. Bob No. 2 Green, T. T. Williamson Sur. S.D. 6,554 ft.
Conroe Drlg. Co. No. 1 J. R. Daugherty, Jas. McGloin Sur. T.D. 4,900 ft.; run Schlumberger survey.
Plymouth Oil Co. No. 1 Brigham, Geo. H. Paul Subd. Core sh. 4,886 ft.
F. B. Schwab No. 1 Smith, Juan Hart & Sons Sur. T.D. 5,510 ft.; abd.

Starr County

J. L. Collins No. 1 Francisco B. Guerra, Santa Cruz Gr. Spd.
Dodd Tr. No. 1 Wardner, Vela Sur., Porc. 84. S.D. 1,535 ft.

W. W. Ely No. 1 M. G. Gonzales. Portion 70. Run csg. to test; cd. oil sd. 751 ft.; cd. gas sd. 1,010-20 ft.; P.B. 773 ft.; perf. csg. 756-68 ft.; swbg.; showing some oil.
Transwestern Oil Co. and Davenport No. 3 Slick, sec. 527. T.D. 6,862 ft.; rec. all but 75 ft. pipe; S.D.

Travis County

C. A. Montgomery No. 1 Lundgren. Lemuel Kimbro Sur. Drlg. 850 ft.; no report.

Victoria County

W. V. Bowles No. 2 Robertson, T. C. Burnham Sur. R.U.
Geo. Echols No. 1 Dunseth, Frances Perez Sur. T.D. 6,537 ft.; run Schlumberger survey.
Superior Oil Co. of Okla. and L. A. Gillespie No. 1 Mahon and Buhler, San Antonio Valley Ditch Sur., Abst. 368. M.I.M.

Webb County

Boysen & Jones No. 1 Watkins, San Casimero Gr. S.D. 1,456 ft.
Bridwell Oil Co. No. 1 Billings, Sur. 36. 10-in. csg. 40 ft.; cg. 2,400 ft.

Willacy County

Magnolia Pet. Co. No. 1 Armendaiz, San Juan DeCarricitos Gr., Sh. 4. Cg. sd. 8,059 ft.

Wilson County

Pattico Oil Co. No. 1 Keller, Karnes Co. Sch. Ld. Sur. S.D. 1,235 ft.

Zapata County

Henry Brown No. 1 Juan Gutierrez, Charco De La Indian Gr. S.D. 1,040 ft.
J. W. Edwards No. 1 Garza, El Zoro ranch, Comitas Gr. S.D. 46 ft.

S. W. TEXAS PROVEN

Batesville—Zavalla County

Wilcox O. & G. Co. No. 2 Gillam, G.W.T. &P.R.R. Sur. T.D. 3,977 ft.; P.B. 3,958 ft.; treated with acid; swbg. sulfur wtr.; P.B. 3,958 ft.; perf. csg. 3,918-45 ft.; swbd. dry; S.D.; abd.

EAST TEXAS

(Border Counties)

Cass County

V. A. Hughes & Co. No. 1 Lyster, Bateman Sur. S.D. 4,231 ft.

Rodessa—Cass County

Union Prod. Co. No. 5 Bangus Unit, Tromwell Sur. Drlg. sh. 2,100 ft.

Bowie County

King Oil Co. No. 1 Ames, J. A. Tolbott Sur. Drlg. 2,603 ft.

Harrison County

Ark.-La. Gas Co. No. 1 C. M. Abney, E. Little Sur. T.D. 4,820 ft.; circulating.

Marion County—Rodessa

Arkansas-Louisiana Gas Co. No. 1 Holland, Hanks Sur. Drlg. sh. 1,515 ft.
Ark.-La. Gas Co. No. 3 Wade Houston, Coy Sur. Drlg. sh. 2,602 ft.
Geo. Barham No. 2 Brantley, Bennington Sur. Drlg. 4,720 ft.
Fohs Oil Co. No. 1 Henderson, Ewing Sur. Drlg. 5,573 ft.
Fohs Oil Co. No. 1 Kemper, Bennington Sur. 7-in. csg. 6,077 ft.; T.D. 6,092 ft. comp.; 307 B.P.D.; ¼-in. ck.
Gulf Oil Corp. No. 1 Beard, Bennington Sur. Drlg. 5,273 ft.
Gulf Ref. Co. No. 1 Beal, Coy Sur. Drlg. 5,009 ft.
Heyser, Heard and Clardy No. 1-B Henderson, U. Ewing Sur. Drlg. 2,106 ft.
Heyser, Heard & Clardy No. 3 Henderson, Bennington Sur. Drlg. 2,200 ft.
Phillips Pet. Co. No. 1 Pruitt-Lockett, U. Ewing Sur. Drlg. 3,293 ft.
Shell Pet. Corp. No. 2 Cooke, Bennington Sur. Drlg. sh.&L. 5,243 ft.
Shell Pet. Corp. No. 2-A Henderson, Bennington Sur. Drlg. 5,761 ft.

Panola County

C. K. Crews No. 1 Graves, McGowan Sur. S.D. 2,531 ft.
Glassell et al No. 1 Pierce & Chesbro, Soaps Sur. O.W.W.O.; old T.D. 5,881 ft.; W.O.

WEST TEXAS WILDCATS

Andrews County

Gulf Oil Corp. No. 1 State, sec. 8, Blk. 14. Sulfur wtr. in hole; P.B.
Honolulu Oil Co. No. 1-6 Parker, sec. 6. Blk. A-66, P.S.L. Sur. Comp.; D.&A.; T.D. 3,538 ft.
Rogers & Rogers No. 1 O. B. Holt, P.S.L. Sur. Drlg. 4,310 ft.
Seaboard Oil Corp. No. 1 Munger-Ntz, sec. 1, Blk. A-4, P.S.L. Sur. Drlg. 1,740 ft.
H. C. Wheeler No. 1 T. M. Gardner, sec. 15, Blk. A-35, P.S.L. Sur. Drlg. 480 ft.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. Tstg. 4,160 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. Drlg. 6,586 ft.
Storey No. 1 Wilson, sec. 3, Blk. 212, T.& St.L. Sur. S.D. 2,545 ft.

Cochran County

Devonian Oil Co. No. 1 Duggan, Oldham Co. Sch. Ld. Sur. Tstg. 8,044 ft.
J. R. Meeker et al No. 1 Wright, Mills City Sch. Ld. R.U.S.T. 4,934 ft.
P. N. Wiggins et al No. 1 Dean, NE cor. League 58, Martin Co. School Lands. Drlg. 5,035 ft.; prep. acid. 5,077 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39 Blk. W. T.&P. Sur. S.D.O. 1,680 ft.
H. E. Ogden et al No. 1 Rawlins, sec. 390 Blk. B-21. S.D. awaiting csg. 2,260 ft.

Cottle County

F. P. Hinds et al No. 1 Lee, 5 mi. SW of Paducah, A.B.&M. Sur. Cg. 4,385 ft.
Wilcox O. & G. Co. No. 1 Richards et al, sec. 761, Blk. Y, W.&G. Sur. M.I.M.

Crane County

J. W. Hampton No. 1 Thackston, W. L. Wilkinson Sur. S.D. 2,200 ft.

Crockett County

Moore Bros. No. 1 Perner, sec. 37, Blk. 2, I.&G.N. Sur. Drlg. 8,865 ft.
J. N. Simpson No. 1 Hoover, G.C.&S.F. Sur. Tstg. 2,067 ft.
Stewart & Cormas No. 1 Hoover, sec. 1, Blk. FF, B.B. Sur. W.O.C. 1,930 ft.

Culberson County

Grisham & Hunter No. 1 fee, sec. 14, Blk. 42, P.S.L. Sur. M.I.S.T.
C. A. Jarrell et al No. 1 C. M. Caldwell, C of SW¼ sec. 15, Blk. 100, P.S.L. Sur. S.D. 507 ft.; H.F.O.; drlg. water well 150 ft.

Dawson County

Albaugh No. 1 Robinson, E.L.R.R. Sur. T.D. 5,038 ft.; tstg.

Dickens County

C. E. Litchfield No. 1 Harris, sec. 354, Blk. 1, H.&G.N. Sur. Comp.; D.&.A.; T.D. 2,001 ft.
J. F. Morrisey et al No. 1 C. L. Bird, sec 290, Blk. 1, H.&G.N. Sur. S.D.; W.O. 2,000 ft.

Ector County

Bodins et al No. 1 Edwards. Drlg. 4,600 ft.
Wentz Oil Co. No. 1-D Parker. S.D. 4,389 ft.; prep. shoot.
Oil Well Dev. Co. No. 1 Cowden. Tstg. 4,287 ft.
L. H. Wentz Oil Co. No. 1-B Parker. Drlg. 4,335 ft.
Melhoan Drlg. Co. No. 1 Gulf Blakeney. Cg. 4,118 ft.

Edwards County

A. P. Carter No. 1 F. D. Sweeten, B.&B. Sur., 2 mi. E of Rock Springs. Drlg. 5,660 ft.
Lyles & Dan Auld No. 1 Henderson, H.E. &W.T. Sur. S.D. 3,200 ft.
Richmond Drlg. Co. No. 1 Brown, G.W. T.&P. Sur. Drlg. 5,540 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Drlg. 3,501 ft.

Fisher County

Daniel & Rhodes No. 1 Nichless, Geo. W. Lawrence Sur. S.D. 3,340 ft.
General Crude Oil Co. No. 1 Morrow, sec. 185, Blk. 2, H.&T.C. Sur. Drlg. 3,537 ft.
Southern Oil Co. No. 1 Bocat, H.&T.C. Sur. S.D.O. 4,016 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Drlg. 4,190 ft.

Gaines County

Amerada Pet. Corp. No. 1 R. W. Robertson, sec. 198, Blk. G, W.T.R.R. Sur. Drlg. 4,405 ft.
Carter, Continental & Plymouth et al No. 1 Geisecke. S.D. 2,130 ft.
Shell Pet. Corp. No. 1 M. B. Robinson, sec. 344, Blk. G, C.C.S.D.&R.G.N.G. Sur. W.O.C. 4,345 ft.

Garza County

M. L. Richards No. 1 Slaughter. T.A. 3,521 ft.; sulfur wtr. 3,502-21 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. M.I.S.T.

Hockley County

Gulf Oil Corp. No. 1 M. G. Gordon, sec. 12, Blk. X, P.S.L. Sur. Loc.
Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. Loc.
Honolulu Oil Co. No. 1-51 Dorthy Slaughter, Labor 51, League 37, Zavalla Co. Sch. Lds. Loc.
Honolulu Oil Co. No. 1-77, Labor 77, League 37, Zavalla Co. Sch. Lds. Loc.
Sid Richardson No. 1 Slaughter, Maverick Co. Sch. Lds. Drlg. 4,351 ft.
The Texas Co. No. 2 Slaughter, Labour 92, League 37, Zavalla Co. Sch. Lds. Drlg. 4,965 ft.; S.O.

Howard County

Lockhart Oil Co. No. 1 Hussinger, sec. 67, Blk. 29, W.&N.W. Sur. Drlg. 677 ft.
W. F. McDermott et al No. 1 Lucas, sec. 18, Blk. 29, Twp. 1n, T.&P. Sur., 5 mi. N of Dodge pool. Drlg. 3,077 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6. Drlg. 3,617 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. U.R. 2,596 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,500 ft.

Lamb County

Toddle L. Wynne, Tr. No. 1 Naunschwander, Labour 1, League 660, State Cap't. Lds. Drlg. by drill pipe 3,285 ft.

Loving County

Barnett Pet. Co. No. 1-A Johnson, sec. 2, Blk. 57, Twp. 1, T.&P. Sur. S.D.O. 3,846 ft.
Carpenter & Grierson No. 1 Mrs. Bennie Barnes, sec. 22, Blk. C-25, P.S.L. Sur. Loc.
Woodley Pet. Co. No. 1 Klah, T.&P. Sur. S.D.; flwd. 40 B.P.D.; T.D. 3,963 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. Drk.

McCulloch County

Westbrook et al No. 1 Johnson, A. Nevendorf Sur. Drlg. 1,828 ft.
Nixon No. 1 Pierce. S.D. 1,001 ft.

Martin County

Harris-Anderson Oil Corp. No. 1 Mollie Robinson, sec. 33, Blk. 38, T.&P. Sur. S.D. 4,189 ft.

Menard County

G. A. Clements No. 1 Murchison, sec. 80 B.S.&S. Sur., 8 mi. E of Menard. Set 8-in.; T.D. 440 ft.
C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Spud. and S.D.

Nolan County

Marland-Drake Drlg. Co. No. 1 J. H. Withers, sec. 65, Blk. 21, T.&P. Sur. Loc.

Pecos County

Harry Baker et al No. 1 White & Baker, sec. 53, Blk. 194, C.C.&S.F. M.I.M.
J. J. Dorr et al No. 2 Payton, sec. 99, Blk. 8, H.&G.N. Sur. Cellar and pits.
Ed Falney No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. M.I.S.R. 2,055 ft.
E. W. Francis et al No. 1-A Westman, T.&S.L. Sur. Drlg. 2,978 ft.
Magnolia Pet. Co. No. 1 McKee. Set 9-in. 5,294 ft.; W.O.C.S.
Messenger & Osborn No. 1 Humble-Young, sec. 49, Blk. 10, H.&G.N. Sur. Prep. acid. 1,807 ft.
S. Thompson No. 1 Elsinore Cattle Co. sec. 54, Blk. D, G.C.&S.F. Sur. T.D. 7,128 ft.; prep. cg.
Thompson & Minshall No. 1 Michaelson, 660 ft. N and W, sec. 24, Blk. 146, T.& St.L. Sur. Drlg. 3,065 ft.
Trans-Pecos Oil Co. No. 1 Gallagher, T.&P. Sur. S.D. 1,610 ft.
Trans-Pecos Oil Co. No. 3-A Papham, G.H.&S.A. Sur. S.D. 1,934 ft.
Wilcox O. & G. Co. No. 1 Serf, sec. 27, Blk. 130, T.&St.L. Sur. Drlg. 948 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. 6-in. cmt. 4,375 ft.

Reeves County

Barnett Pet. Corp. No. 1 Ely, sec. 38, Blk. 71, P.S.L. Sur., 12 mi. NW of Toyah. Drlg. 3,605 ft.
Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. Drlg. 750 ft.

Runnels County

E Z Oil Co. No. 1 B. Fletcher, E. C. Good Sur. T.D. 4,394 ft.; P.B. to 4,360 ft.; W.O.C.S.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. S.D. 5,004 ft.
Tex-Tor Oil Corp. No. 1 Judkins & Spencer, C of SW¼ sec. 33, Blk. A, A.&B. Sur. W.O.C.; T.D. 5,452 ft.

Scurry County

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. T.D. 3,515 ft.; P.B. 2,500 ft.; tstg.
T. G. Shaw Oil Co. No. 1 First Natl. Bank. Drlg. 3,050 ft.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 915 ft.

Sutton County

Ordovician Oil Co. No. 1 Evans, sec. 1, L. Stubblefield Sur., 32 mi. SE of Sonora. Fsg. 4,057 ft.

Terrell County

D. & S. Oil Co. No. 1 Sam Bell. S.D. 345 ft.

Terry County

C. H. Hutto No. 1 Brownfield, E.L.R.R. Sur. S.D. 687 ft.

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Wardlaw, sec. 5, Blk. 17, H.&T.C. Sur. Fsg. 4,043 ft.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. U.R. 5-in.; T.D. 3,550 ft.

Upton County

W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. Fsg. 210 ft.
Rutter et al No. 1 Egolb, sec. 5, J. H. Gibson Sur. Blg.; T.D. 3,294 ft.
J. S. Pitman No. 1 D. Elder, C.C.S.D.& R.G.N.G. Sur., Blk. 3, sec. 14. Drlg. 1,425 ft.

Ward County

Cities Service No. 2 Brandenburg, sec. 4, Blk. 32, H.&T.C. Sur. W.O.C. 1,980 ft.; S.O. and G. 2,000 ft.
M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. S.D.O. 3,021 ft.
J. E. Fitzpatrick et al No. 1 H. B. Carr, sec. 125, Blk. 34, H.&T.C. Sur. S.D. 123 ft.; R.U.S.T.
J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. S.D. 123 ft.
Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Drlg. 614 ft.
Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. S.D.R. 746 ft.
Patillo & Webster No. 1 Johnson. Drlg. 1,750 ft.
Sayre Oil Co. No. 1 Bertner, sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 60 ft.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. Drlg. 160 ft.
L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. S.D. 4,710 ft.

Yoakum County

Bahago & Bond Oil Corp. No. 1 J. L. West, sec. 607, Blk. D, J. H. Gibson Sur. Drlg. 4,630 ft.
Ohio No. 1 Claywater, sec. 638, Blk. D, J.H. Gibson Sur. R.U.R.
Shell No. 1-C Baumgart, sec. 866, Blk. D, J. H. Gibson Sur. Rng. csg.; T.D. 2,251 ft.
Texas Co. No. 1 Walker, sec. 794, Blk. D, El. 3,656 ft.; T.D. 5,180 ft.; P.B. 5,162 ft.; S.D. 5,162 ft.
Stogner & Pipkin No. 1 Blade, J. H. Gibson Sur. S.D.; W.O. 5,266 ft.

E. C. TEXAS WILDCATS

Anderson County

Humble O. & R. Co. No. 1-C Southern Pine Lbr. Co. Comp.; D.&A.; T.D. 9,155 ft.
H. L. Parsons No. 1 H. B. Hemby, 7 mi. NE of Navarro. Tstg. 5,487 ft.

Angelina County

J. C. Bonham No. 1 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. S.D. 610 ft.
Gar-Flo Oil Co. No. 1 J. L. Russell, J. Morin Sur., 3 mi. E of Dibol. R.U.
Ginter Co. No. 3 Copes Heirs, J. Morin Sur., 4 mi. E of Dibol. R.U.
C. E. Parrott No. 1 J. C. Burres, W. Plucker Sur., 2½ mi. W of Huntington. Drk.

Bowie County

Ferguson-Hill No. 1 Breckenridge. S.D. 2,950 ft.
King Oil Corp. No. 1 W. W. Ames, 800 ft. S and 1,650 ft. E of J. A. Tolbott Sur., 4½ mi. NW of Texarkana. Drlg. 3,200 ft.

Cherokee County

Merica Oil Co. No. 1 Cherokee Dev. Co., A. J. Acker Sur., 2 mi. E of Maydelle. M.I.M.

Dallas County

Plaza Oil Co. No. 1 Davidson, Marchants Sur., 1 mi. NW of Seagoville. R.U.

Falls County

McCleod et al No. 1 F. Bolton, J. R. Cockrill Sur., 4 mi. NW Rosebud. Fsg. 1,708 ft.

Freestone County

C. E. Rossiter No. 1 J. P. Fulton in J. P. Fulton Sur., 2½ mi. E of Donie. S.D. 956 ft.

Grayson County

Denver Prod. & Ref. Co. No. 1 E. B. Moore, E. Barnes Sur., ¼ mi. NW of Whitesboro. Drlg. 200 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi. SW of Longview Trinity test. El. 273 ft.; drlg. 8,087 ft.

Henderson County

Howard Pet. Co. No. 1 H. W. Barton, A. J. Allen Sur. R.U.

Hill County

J. Willis No. 1 W. P. Ball, S. Marshall Sur., 3 mi. NW of Covington. M.I.M.

Lamar County

Cooper Bros. No. 2 L. B. Hayes, L. Roberts Sur. Loc.

Limestone County

C. L. Brown No. 27 N. B. Boyd, R. B. Longbotham Sur., 3 mi. S of Wortham. T.D. 1,402 ft.; oil sd.; S.D.W.O. 1,455 ft.
J. S. Cosden, Jr. No. 1 J. J. Bower, J. Breeding Sur., near Prairie Hill. Loc.
Puree Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. P.B. from 8,847 ft.; tstg. 5,650 ft.
Stanolind O. & G. Co. No. 1 T. Norris, in Thresher Sur., 5 mi. N of Kosse; 6,500-ft. test; elev. 528 ft.; drlg. 8,010 ft.

McLennan County

Chapman & Kahn No. 1 Carl Hartsman, B. C. Walters Sur., 1½ mi. S of McGregor. Drlg. 773 ft.

Navarro County

Natural Pet. Co. No. 1 Karen Brown, W. T. Turner Sur., 2 mi. E of Roane. R.U.
Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana. Cg. 2,185 ft.
T. Sharpe et al No. 1 E. B. McDowell, T. Jordan Sur., 1½ mi. S of Bassett. S.D. 3,160 ft.

Trinity County

Billnoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. S.D. 120 ft.

Upshur County

Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. Drlg. 6,040 ft.
L. & G. Oil Co. No. 1 H. Williams, Roeder Sur., 2 mi. NW of Gracetown. Drlg. 3,752 ft.

NORTH TEXAS WILDCATS

Archer County

Thos. A. Jirik No. 1 D. L. Wolf, J. Poitevent A-348 Sur. Loc.

Wayne King et al No. 1 C. A. Arthur, sec. 3, G.H.&H. Sur. A-158. Spdg. 160 ft.

Baylor County

D. S. Kelly No. 1 W. T. Waggoner, sec. 54, T.&N.O. Sur. S.D.O. 1,200 ft.

Clay County

Barnett Pet. Co. No. 1 Ben Nutter, sec. 30, Grayson Co. Sch. Lds. Drlg. 1,185 ft.

Healdton O. & G. Co. No. 1 Wallace, Belcher Subd. Drlg. 3,330 ft.

Seitz, Comegys & Seitz No. 1 L. Wright, sec. 2632, T.E.&L. Sur. Drlg. 1,000 ft.

Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. Loc.

Cooke County

Byars & Nenny No. 1 W. A. Scroggins, S. P. Yearwood Sur. A-1,554. Drlg. 3,000 ft.

W. O. Russell No. 1 Bundy P. Cady. Sur. Testing S.S.O. 2,164-68 ft.

W. O. Russell No. 1 J. W. Sherrill, Wm. Phelps Sur. A-821. S.D. 2,121 ft.

Denton County

W. C. Curry et al No. 1 G. F. Owens, N Rudder Sur. A-1,060. S.S.O. 1,570-80 ft.; S.D.O.

Foard County

Texas Co. No. 14 Johnson, sec. 37, S.P R.R. Sur., Blk. L. Lime 3,760-80 ft.; treating with acid; C.O.

Jack County

Avers et al No. 1 Garrison, W.C.R.R. Sur. A-960. Drlg. 400 ft.

Bennett Pet. Corp. No. 1 J. Matlock, sec. 1, B.S.&F. Sur. A-78. 6⅝-in. 2,960 ft.; O.S. 3,060-80 ft.; tstg.

Hanlon-Buchanan, Inc., No. 1 Ed M. Myers, N. F. Rudmose Sur. A-1,803. O.S. 3,830-40 ft.; shot with 40 qts.; 2,800 ft of oil in hole; S.D.O.

O. J. Perrin No. 1 J. S. Rhodes, J. W. Coates Sur. A-1,240. R.U.R.

Taubert & McKee No. 1 R. H. Eatherly. J. H. Henderson Sur. A-1,749. Spud. and S.D.

Van Eman & Richards No. 1 Whitsell Wm. McElroy Sur. A-599. Drlg. 2,800 ft.

Montague County

Bridwell Oil Co. No. 1 W. W. Radford, M. Burnside Sur. Drlg. 2,990 ft.

J. W. Sorrell et al No. 1 J. E. Walthall Sam. H. Smith Sur. A-662. S.D.O. 2,-720 ft.

Wichita County

Geier Bros., Inc., and F. B. Jackson, Jr., No. 1 C. F. Ancell, W.&M. Sur. A-1292. 6⅝-in. 3,960 ft.; drlg. plug.

W. E. Hammon No. 1 Mrs. H. Lalk, Blk 284, W.C.S. Sur. U.R. 10-in. csg.

F. W. Merrick, Inc., No. 1 W. T. Waggoner, sec. 35, H.&T.C. Sur., Blk. 5. Loc.

E. T. Noble No. 1 K. P. Abernathy, sec. 9, T.C.S.L. Sur. A-282. Setting surface csg.

Rathke Oil Co. No. 1 S. B. Burnett "Gulf," sec. 4, H.T.&B. Sur. A-752. Drlg. 3,385 ft.

E. J. Stump No. 1 M. P. Bishop, L. Netherly Sur. A-240. S.D.O.; S.L. 3,885-3,997 ft.

Joe A. Worsham No. 1 Waggoner Bros., sec. 13, B.S.&F. Sur. A-343. 6⅝-in. 3,720 ft.

T. L. Wynne, Tr., No. 1 Waggoner Bros., Lot 36, H. George Sur. 6⅝-in. 3,846 ft.; drlg. 3,910 ft.; S.L. 3,876-86 ft.; C.O. after shot.

Wilbarger County

Barry & Hayes No. 1 McGill, sec. 3, Blk. 9, H.&T.C. Sur. C.O.; to D.D.

E. C. Lawson No. 1 Ruitsch, sec. 21, H. &T.C. Sur., Buk 9. R.U.C.T.

Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 2,301 ft.

B. R. Rainwater No. 1 J. A. Turkett, Blk. 8, W.C. Sur. Cmt. surf. pipe.

Young County

Annac Oil Corp. No. 1 E. S. Graham, A Hines Sur. A-135. Fsg.; treating L. 3,-672-3,775 ft.

N. B. Crenshaw No. 1 J. C. Dwight, sec. 1,444, T.E.&L. Sur. S.D. 400 ft.

Howard Pet. Co. No. 1 G. R. Stewart, sec. 84, C.S.L. Sur. Drlg. 1,080 ft.

Kadane-Griffith No. 1 Sanders, sec. 1989, T.E.&L. Sur. R.U.C.T.

L. A. Long No. 1 F. A. Burnett, E. G. Rector Sur. No. A-239. R.U.C.T.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

H. P. Evans No. 1 J. T. Hall, 2 mi. N of Bangs, 220 ft. from N line and 11,005 ft. from W line of SW¼ sec. 25, H.T. &B.R.R. Sur. Drlg. 710 ft.

R. B. Irving et al No. 1 T. C. Giddings, 390 ft. from S line and 3,382 ft. from W line of J. J. Cleiland Sur., 1 mi. E Thrifty. Correct owner was Irving & Prairie Oil Co.; 1,500-ft. test; drlg. 510 ft.

Callahan County

Dudley Dev. Co. No. 1 Smith Hrs., 7 mi. NW of Oplin, 1,080 ft. from S line and 620 ft. from W line of W½ of SW¼ sec. 4, S.P.R.R. Sur., Blk. 1. Loc.; 2,-200-ft. test.

R. F. Gilman et al No. 1 W. A. Young, 5 mi. NW Clyde, sec. 37, B.B.B.&C. Sur. Drlg. 1,800 ft.

Hal Hughes No. 1 Poindexter, sec. 350, Geo. Hancock Sur., 2 mi. NE of Oplin. Set 7-in. 3,870 ft.; R.U.S.T.

J. C. Jackson et al No. 1 Thompson, 2 mi. S. Eula, sec. 30, B.B.B.&C. Sur. S.D. 1,510 ft.

Phillips Pet. Co. No. 1 Cozart, 1 mi. NW Scranton, M. Cherry Sur. Drlg. 3,200 ft. in L.

R. F. St. John No. 1 A. E. Dyer, 4 mi. NW of Clyde, 1,385 ft. from E line and 1,323 ft. from S line of sec. 40, B.B.B. &C. Sur. Setting 6-in. 1,950 ft.

Coleman County

J. F. Brock No. 1 J. H. Livingston, SE cor. SW¼ county, J. D. Waters Sur. No. 208. Drlg. 820 ft.

Vic Eckholm et al No. 1 W. S. Duty et al, 5½ mi. S of Burkett, 220 ft. from N and W lines of SE¼ sec. 25, H.T.&B. Sur. Spud 2,500-ft. test.

Comanche County

N. D. Gallagher et al No. 1 Mrs. B. I. Terry, Desdemona pool, N. H. Kuykendall Sur. S.D.

Dobbs Oil Co. No. 1 Hodges, sec. 11, Blk 2, H.&T.C. Sur. T.D. 2,710 ft.; show oil and gas; set csg. 2,525 ft.

Eastland County

G. D. Chastain et al No. 1 Weddington, 4 mi. N. Cisco, sec. 496, S.P.R.R. Sur. L. 3,315-30 ft.; est. 40 bbls.; drlg. 3,-810 ft.

Hickok Prod. & Dev. Co. No. 1 J. E. Donovan, 5 mi. NW of Cisco, 660 ft. from N and E lines of NW¼ sec. 489, S.P. R.R. Sur. Drlg. 3,100 ft.

J. D. Kittrell No. 1 Reynolds, 5 mi. E of Carbon, sec. 23, H.&T.C. Sur., Blk. 1, Prep. to deepen.

Lone Star Gas Co. No. 1 M. Thomas, 5 mi. NW of Cisco, 668 ft. from N line and 660 ft. from E line of SE¼ sec. 478, S.P.R.R. Sur. Drlg. 1,020 ft.

Monark O. & G. Co. No. 1 Downtain, sec. 14 H.&T.C. Sur. Blk. 4, 3 mi. N Eastland. S.D. 2,175 ft.

Erath County

J. Hickey et al No. 1 Smith, 5 mi. SE Desdemona, J. B. Smith Sur. Shot with 165 qts. 2,906-3,065 ft. in sd.; S.D.

Fisher County

Magnolia No. 1 Joe Howard, 330 ft. from S and W of E 102-ac., SW¼ sec. 185-2, H.&T.C. Sur. Loc.

Sunray Oil Co. No. 1 Snowden Lse. (10-ac. tr.), 330 ft. from S line and 1,270 ft. from W line of Sur., 2½ mi. NE of Rotan, H.&T.C. Sur., sec. 185. Loc.

Jones County

Bells Wells Oil Co. No. 1 R. L. Pond, 4½ mi. NE Avoca, 330 ft. from S and W lines of NE¼ sec. 165, B.B.B.&C. Sur. U.R. 6-in. 2,765 ft.

J. S. Bridwell No. 1 C. L. Carter, 220 ft. from N and E lines SW SE section 37-15, T.&P. Sur. Loc.

Jack Burleson No. 1 T. J. Lotspeich, 220 ft. from S and E lines of sec. 40-15, T.&P. Sur. Drlg. 1,400 ft.

Danciger No. 1 Hugh E. Roberts, 220 ft. from S and W lines, E 110-ac., NE¼ sec. 37-15, T.&P. Sur.

Fain & McGaha Oil Corp. No. 1 Mrs. L. E. Williams, 3½ mi. SW Nugent, 220 ft. from S & W lines of NE¼ of Sec. 37, T.&P. Sur., Blk. 15. Sdy. L. 1,935-55 ft.; shot with 40 qts.; comp. flowing 410 B.O. in 10 hrs.

Felmont & Adams No. 1 Woodson, 1½ mi. SE Avoca, sec. 200, B.B.B.&C. Sur. 311. D.&A. 3,402 ft.; H.F.W.

Grisham & Hunter No. 1 E. D. Appling, NW¼ county, 1,208 ft. from S line and 1,450 ft. from W line of SW¼ sec. 32, B.B.B.&C. Sur. Sand 2,640-53 ft.; est. 50 B.O.P.D., 20 B.W.P.D.; drlg. 3,050 ft.

Gwynn & Overby et al No. 1 Mrs. W. D. Baker, 4½ mi. SE of Anson, 220 ft. from N and W lines of S½ of SE¼, sec. 36, O.A.L. Sur. D.&A. 2,300 ft., T.D.

Mack Hayes and Montour Oil Co. No. 1 Chittenden, 7 mi. SE Hamlin, Subd. 18, McMullen & McGloin Sur. 337. Drlg. up underreamer at 2,722 ft., T.D.

T. D. Humphrey No. 1 Fielder, 2½ mi. E Anson, sec. 34, O.A.L. Sur. Drlg. 2,505 ft.

Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub. 18, Austin Williams Sur. 339. Spudding.

Walter K. Jones No. 1 D. M. Neas, 506 ft. from E and 1,113 ft. from S of Neas 75 ac., D. Bustillos Sur. 189. Loc.

F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. Drlg. 1,230 ft.

Oil States Expl. Co. No. 1 Olson, 4 mi. N Avoca, sec. 182, B.B.B.&C. Sur. S.S. oil 4,820 ft. in Caddo lime; tstg.

Owens-Snebold No. 1 Alice Rhodes, 4 mi. W of Nugent, 330 ft. from N and W lines of NW¼ sec. 31, T.&P. Sur., Blk. 15. Lost hole 950 ft.; skd. 20 ft. E; drlg. 1,400 ft.

Roeser & Pendleton No. 1 fee, 2 mi. NW of Nugent, 2,800 ft. from N line and 3,240 ft. from W line of sec. 4, T.&P. Sur., Blk. 15. Pulling 5-in. at 3,684 ft., T.D.

B. H. Roth No. 1 D. A. Kinney, 4,000-ft. test, 330 ft. from S and E of NW sec. 7-4, H.&T.C. Sur. Loc.

Dale Smith & Bert Fields No. 1 C. L. Carter, 3 mi. SW of Nugent, 220 ft. from N and W lines of SE¼ of SE¼ sec. 37, T.&P. Sur., Blk. 15. T.D. 1,890 ft.; S.O.; shot 20 qts. 1,875-85 ft.; C.O.

Stanton & Miller No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B &C. Sur. W.O.C. 10-in. at 2,092 ft.

Mills County

Balyaet & Boyd No. 1 Westbrook, 7 mi. W of Goldthwaite, 4,950 ft. from S line and 4,290 ft. from W line of Caldwell Co. Sch. Ld. Sur. Drlg. 900 ft.

Palo Pinto County

Brazos River Gas Co. No. 5 M. B. Costello B, 1½ mi. N Pickwick, 1,397 ft. from N line and 150 ft. from W line of survey (W line being river bank), 660 ft. SW No. 4, R. R. Williams Sur. Drlg. 3,100 ft.

W. H. Clement No. 1 Federal Life Ins. Co., 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B). Drlg. 1,-510 ft.

Bill Cole et al No. 1 J. W. Harris Est., NW cor. county, De La Garza Sur. Drlg. 910 ft.

W. K. Gordon et al No. 1 Johnson, 5 mi. N Gordon, John Bird Sur. Drlg. 3,-550 ft.

Henry Hobbs et al No. 1 Bessie Holt, 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. S.D. 200 ft.

King Oil Co. No. 1 S. F. Lee, 4 mi. NW Graford, 933 ft. from N and W lines of sec. 1,744, T.E.&L. Sur. Drlg. 3,985 ft.

Ernest Lloyd et al No. 1 McClure, 3 mi. NE Graford, sec. 2,004, T.E.&L. Sur. S.D. 1,200 for csg.

Shackelford County

Danciger No. 2 J. E. McCown, 330 ft. from S and E sec. 158, B.B.B.&C. Sur., N offset to Haterius. Loc.

Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test; S.D. 360 ft.

Forest Dev. Corp. No. 1 T. G. Hendrick, NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1. A.B.&M. Sur. Est. 15,000,000 ft. gas per day 1,603-17 ft.; mudded off; setting 10-in. to cement.

Hugh King, Jr., et al No. 2 Davis-Walker, sec. 55-13, T.&P. Sur. S.S.O. 3,427-32 ft.; drlg. 3,450 ft.

T. D. Humphrey No. 1 Alston, NE cor. county, sec. 16, H.&T.C. Sur., Blk. 3. Cmtd 5-in. at 3,180 ft., T.D.

Iron Mountain Oil Co. No. 1 E. O. Beck, NW cor. county, 300 ft. from S line and 299 ft. from W line of sec. 162, B.B.B. &C Sur. M.I.M.

C. J. Kleiner et al No. 1 Morris, 2 mi. NE Bluff Creek pool, sec. 187, E.T.R.R. Sur. Drlg. 2,065 ft.

F. G. Lippitt et al No. 1 W. I. Cook Est., 3 mi. NE Cook pool, 1,470 ft. from E line and 150 ft. from S line of S½ SE sec. 53, E.T.R.R. Sur. Loc.

Owens-Snebold Oil Corp. No. 1 Haterius, sec. 163, B.B.B.&C. Sur. 6-in. to 3,192 ft.; squeeze 3,192-3,211 ft.; T.D. 3,218 ft.; trtd. 2,000 gal. acid; tstg.

R. C. Parker No. 1 J. Smalley, NW cor. of NE¼ county, 1,245 ft. from N line and 1,260 ft. from E line of sec. 11, E.T.R.R. Sur. M.I.M.

Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Aileen Copeland, 8 mi. SE Ivan, 1,196 ft. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. Drlg. 1,600 ft.

Graham, Hafner, Lane & Inman No. 1 J. N. Yocum, 5 mi. SE of Frankell, 250 ft. from N and E lines of farm or approx. 2,525 ft. from E line and 1,400 ft. from S line of John R. Carter Sur. S.D. 250 ft.

I. C. Little No. 1 R. M. Rogers, NE¼ of county, 150 ft. from E line and 1,980 ft. from S line of sec. 28, T.&P. Sur., Blk. 5. Drlg. 2,940 ft.

G. Willard Rich No. 1 M. M. Andrews, SW cor. county, 450 ft. from S line and 300 ft. from W line of N½ sec. 39, T. &P. Sur., Blk. 7. Loc.; 4,500-ft. test.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371, H.&T.C. Sur., Blk. 2. Drlg. 1,000 ft.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. S.D.O. 2,140 ft.

Taylor County

Dr. W. C. Braham et al No. 1 Ernest Armstrong, 3½ mi. E of Abilene, 220 ft. from S line and 330 ft. from W line of NE¼ SE¼ sec. 40, B.A.L. Sur. S.D. 800 ft.

Bert Fields et al No. 1 Sears, sec. 223, Blk. 64, H.&T.C. Sur. S.D. 1,530 ft.

A. Findley No. 1 Bowles Est., NE cor. county, sec. 26, B.A.L. Sur. Tstg. 1,873-80 ft.

Throckmorton County

Morris & Spoonts No. 1 Alden Bros., NW cor county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 610 ft.

Henry Zweifel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. Drlg. 400 ft.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E of Bridgeport, Jas. Couch Sur. T.D. 4,075 ft.; P.B. to 3,910 ft.; drlg. plug.

Canadian Fields

(Continued from Page 218)

Tests in the Foothills

On the Brazeau structure, in the northern foothills west of Edmonton, Home Oil Co. No. 1 Brazeau, LSD 16, section 7-43-17w5, is below 355 feet.

On the Moose dome, Mode-Canyon No. 1, LSD 16, section 30-22-6w5, is starting new hole after skidding the outfit.

On the Highwood-Sinclair structure, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, is below 5,183 feet and expected to get the Madison limestone in a few days. Additional gas and oil shows were encountered in the brown sand of the Dalhousie formation. The test has logged closely with the Turner Valley wells, except that the formations are somewhat shallower.

Border Fields

In the Taber field, southern Alberta, Plains Petroleum Corp. No. 2, LSD 11, section 25-9-17w4, is testing production. Plains Petroleum Corp. is unloading material and equipment for two additional wells in the Taber area. South of Magrath, Lyons-McIntyre No. 1, LSD 14, section 19-3-21w4, is rebuilding rig. Pan-Canadian Petroleums, Ltd., of Vancouver, British Columbia, is planning a test in the spring.

Imperial Oil, Ltd., has secured some acreage in the Lethbridge district, extending from 8 to 10 miles southeast of the Old Man River. Some seismographic work has been done and a great deal of additional preliminary work will be done to determine if it is worth while to drill.

S. Myron Zandmer of Los Angeles, Calif., is arranging to drill a test in the Del Bonita-Twin River area south of Lethbridge, on acreage of Nordon Corp. The Zandmer interests through Terminal Oil Co. drilled a deep test in this area several years ago, which got good shows of high-grade crude at the Ellis-Madison contact but failed to develop commercial production.

In the Steveville district, Anaconda Oil Co. No. 1, LSD 15, section 9-22-12w4, will resume in the spring from 1,207 feet.

East Central Alberta

In the Ribstone area, east central Alberta, Blackfoot-Ribstone Oils, Ltd., has let contract to Gillies-Credille Drilling Co. for No. 1 in SE quarter section 28-43-2w4. Location was made by Geologist Russell V. Johnson of Calgary.

Mission Project Approved

Shareholders of the Firestone, Monarch, Foundation and Prairie companies, with producing wells on the Turner Valley west flank, have approved a projected exchange of capital stock with Mission Oil Co. of Canada, Ltd., to facilitate drilling operations in potential oil areas west and south of the proven Turner Valley field. Mission Oil Co. has subleased 5,000 acres from Anglo-Canadian Holding and Development Co. which is taking a one-third interest. It is planned to drill two tests this spring.

To Test South Extension

Leasing activity south of the Highwood River indicates a possible southerly extension of the Turner Valley structure will be tested this spring. The farthest south producer is Brown Oil Corp. No. 1, LSD 13, section 16-18-2w5, and the farthest south drilling is Davies Petroleums No. 3, LSD 7, section 33-17-2w5. K. M. Leach, J. M. Dillon and James Wordie of Calgary have purchased petroleum and natural gas rights on 300 acres southeast of Pekisko, about 12 miles south of Brown Oil Corp. No. 1; and several deals have been reported on acreage in Townships 15 and 16, due south of the Turner Valley crude area.

MADISON

(Continued from Page 58)

ant is entitled to separate consideration, and directed that verdicts be brought on each individual and each corporation.

"If you find that the defendants and those acting in concert with them controlled the greater part of the gasoline sold in the 10 middlewestern states and had the power to raise the price of gasoline and that the defendants and those other persons acting with them have knowingly engaged in a combination to fix the price to be charged for gasoline to jobbers or consumers in the middlewestern area as charged . . . then you will understand that these defendants have violated the Sherman act . . . " he ruled.

Lawful activities by such a group do not protect them in unlawful activities, the court further explained, and this applies to the activities of defendants under the code, he said.

Factors in Defense

Relating the factors which the defense held responsible for the increase in tankcar prices, the court continued, "Unless you find from the testimony and believe that the said price increase and its continuance at the level shown by the evidence was caused by an unlawful agreement or combination of the defendants, then it is your duty to acquit the defendants."

However, he instructed, if it was found that the defendants combined to raise the sale price, any good intentions would not exclude them from the consequences, "and it does not matter how helpful or beneficial such illegal activities may have been to the defendants or to the independent refiners or to any other class of persons."

"If you find a combination and that the members of the combination had the power to raise the price, and acted together for that purpose, then I charge you that the combination is illegal."

In finding that a conspiracy existed, it was not necessary, the court held, for the jury to find that the former defendant journals knowingly cooperated, and if the jury found that the independent refiners cooperated with the defendant major companies to raise the price "it does not matter which group led the price upward."

"If you come to the conclusion that these defendants possessed the power to raise the price of gasoline . . . and that there was the purpose to exert that power, then the combination became from the time this purpose appeared an illegal one."

Touching upon the status of the presidents of several major companies included among the defendants, against whom no direct evidence was presented but who, the prosecution claimed, must have known about and authorized the acts of their subordinates, Judge Stone said:

"The president or chief executive officer of a company may be found guilty of participating in an unlawful conspiracy if the jury should believe from the evidence that he had knowledge of and authorized or ordered his company's participation and did nothing more. But you must be satisfied from all the evidence, beyond a reasonable doubt, that he did have such knowledge and did, expressly or impliedly, authorize the doing of the illegal act before you may convict him."

Significance also was attached to the following instruction as far as the defense was concerned:

"If you should find that the defendants acting together, and those independent refiners found acting in concert with them, did not have the power to raise the level of the spot market prices in the spot markets referred to in the indictment, or that they did not combine for that purpose, and if you should find also that the purchase of distress gasoline by the defendants affected the spot market prices only indirectly and incidentally, then you may consider all the circumstances surrounding the activities of the defendants to determine whether they were intended to and did merely eliminate abuses which tended to produce destructive competition and restore competition to a fairer basis and produce fairer price levels."

In such a case, the jury might consider the purchases reasonable and beneficial, he held, and the restraint of trade was not "undue and illegal."

The judge further clarified his instruction in accepting one added suggestion by the defense after overruling all other exceptions presented in a half hour's argument after he had concluded. This supplemental instruction directed:

"It is no conspiracy if the defendants acted alone, no matter what price was paid or quantity bought. Simultaneous or contemporary action is no evidence of a combination."

Petroleum Code

Regardless of whether or not one of the purposes of the code was to raise prices, Judge Stone ruled the defendants would not be justified in combining with others to raise the price, assuming they had the power to do so, unless their activities were specifically authorized by the code or approved by the president or secretary of the interior, and no such approval was shown, he held.

"Even if you should find that some government officers knew of or acquiesced in such combination and conspiracy," he added, "such knowledge or acquiescence would not excuse the violation of the Sherman act, if you find that the law was violated."

It also makes no difference if some of the illegal activities were planned at code meetings, and that any conspirator was known as "chief stabilizer," or a member of a stabilization subcommittee, or that any of the matters were brought to the attention of the P and C committee, or any members paid by the P and C committee, the court held, declaring these matters could be considered only in connection with reasonableness of the activities and only if the jury found the power was not present to control prices.

Judge Stone instructed that no jury should convict a corporation of violating the Sherman act solely because of its size or the extent of its business, and told the jurors they were not concerned with the financial status of any defendant, "whether he be rich or poor."

Even if some of the defendant companies endeavored to keep track of the purchases of gasoline, as to amount and price, being made by their competitors, and even if they governed the amount and price of their purchases thereby, this would not be illegal provided they acted independently and not in concert, he held, and it was entirely proper for the independent refiners in East Texas to sell their gasoline through the East Texas Refiners Marketing Association as a selling agency. No unfavorable inference should be drawn from the mere fact that some defendants purchased gasoline through the association, provided also they acted independently, but if they acted in concert, to raise the price, the activities would be illegal, he added.

"Each of the defendant oil companies, if it acted alone and not in agreement with others, had the legal right to pay any price it chose for tankcar spot gasoline in the East Texas and Mid-Continent fields, whether it was above, at or below the market, and whether or not its purpose or motive was to aid independent refiners, the instructions stated.

"The fact that some or all of defendant companies bought gasoline in the East Texas or Mid-Continent fields in 1935 or 1936, whether in large or small quantities, and whether or not they had bought there before, does not, in and of itself, prove any agreement or understanding between them to buy, either legal or illegal.

"The fact that in March, April, May and June, 1935, the spot tankcar price of gasoline in the East Texas and Mid-Continent fields rose and thereafter remained stable until January, 1936, when it again rose, does not, standing alone, prove any agreement or understanding between defendants, either legal or illegal."

Judge Stone directed verdicts of acquittal for four defendants, Dewey K. Chamberlain, manager of Tulsa division, Pure Oil Co.; Clyde M. Boggs, president, Western Petroleum Refiners Association; Thomas Fitzgerald, assistant vice president in charge of sales, Mid-Continent Petroleum Corp. and H. A. Gardner, tankcar sales manager, Phillips Petroleum Co.; L. F. Cramer, tankcar buyer for Continental Oil Co.; and F. L. Koopman, executive of Phillips Petroleum Co.

Directed verdicts of acquittal previously had been granted to Ira A. Smith, buyer for Standard of Indiana; R. R. Irwin, manager White Eagle division, Socony-Vacuum; John A. Welch, sales manager, Louisiana Oil; W. S. S. Rodgers, president, Texas Co.; R. D. Cottingham, assistant to Rodgers; H. W. Dodge, vice president in charge of sales, Texas Co.; P. C. Scullin, vice president and general manager, Indian Refining Co.; R. O. Audrain, buyer, Tide Water Oil Co.; James F. Nagle, Tulsa division sales manager, Skelly Oil Co.; and Warren C. Platt, president, National Petroleum News.

Defendants not brought to trial for various reasons included John A. Brown, president, Socony-Vacuum Co.; Frank S. Coates, vice president, Cities Service Co.; D. W. Harris, general manager, Louisiana Oil; Edward Karstedt, former vice president, Continental Oil; J. F. Drake, president, Gulf Oil and Gulf Refining companies; William V. Hartmann, vice president, Gulf Oil and Gulf Refining; H. D. Meyer, and O. H. Carlisle, Gulf officials; Bernard L. Majewski, vice president, Deep Rock Oil Co.; and Keith Fanshier, petroleum editor, Chicago Journal of Commerce.

Cases Given to Jury

Individual defendants whose cases went to the jury are Edward G. Seubert, Allan Jackson and Edward J. Bullock, president and vice presidents respectively, Standard of Indiana; Charles L. Jones, vice president, Socony-Vacuum; Charles E. Arnott, vice president, Socony-Vacuum; H. T. Ashton, manager, Lubrite division, Socony-Vacuum; A. G. Maguire, chairman of board, Wadhams Oil Co.; Bryan S. Reid, general sales manager, Chicago division, Socony-Vacuum; Harry D. Frueauff, vice president, Empire Oil & Refining; H. E. Brandli, vice president and general manager, Cities Service Export; O. J. Tuttle, tankcar sales manager, Empire; Dan Moran, president, Continental; Harry J. Kennedy, vice president, Continental; Henry M. Dawes, president, Pure Oil; C. B. Watson, vice president, Pure Oil; R. H. McElroy, Jr., tankcar sales manager, Pure Oil; Alexander Fraser, president, Shell Petroleum Corp.; P. E. Lakin, general sales manager, Shell; J. W. Carnes, vice president, Sinclair Refining; Edward L. Shea, vice president, Tide Water; Noel Robinson, Tide Water; J. W. Warner, Tide Water; Jacob France, president, Mid-Continent; Robert W. McDowell, vice president, Mid-Continent; Frank Phillips, president, Phillips; A. M. Hughes, sales manager, Phillips; W. G. Skelly, president, Skelly Oil Co.; E. B. Reeser, president, Barnsdall Refining; I. A. O'Shaughnessy, president, Globe Oil & Refining Co.; and Arthur V. Bourque, secretary, Western Petroleum Refiners Association.

The 16 corporations whose cases were committed to the jury are: Standard Oil of Indiana; Socony-Vacuum Oil Co., Inc.; Cities Service Co.; Continental Oil Co.; Pure Oil Co.; Shell Petroleum Corp.; Sinclair Refining Co.; Mid-Continent Petroleum Corp; Phillips Petroleum Co.; Skelly Oil Co.; Barnsdall Refining Corp.; Globe Oil & Refining companies of Oklahoma, Illinois and Kansas; Empire Oil & Refining Co.; Wadhams Oil Co.

Corporate defendants dismissed by the court were Gulf Oil Corp.; Gulf Refining Co.; Texas Co.; Tide Water Associated Oil Co.; Deep Rock Oil Corp.; Cities Service Export Co.; Louisiana Oil Refining Corp.; and Tide Water Oil Co. of New Jersey.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Jan. 22 Sales	Week ending Jan. 22 High	Week ending Jan. 22 Low	Week ending Jan. 22 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1937 High	1937 Low	1936 High	1936 Low
68½	59	1,600	67	64½	64½	Amerada Corp.	788,675	N.P.	50cQ	10-30-37	$2.00	114⅞	51½	125½	75
22¼	20	5,700	22¼	20½	20½	Atlantic Refining	2,664,000	$25	25cQ	12-15-37	1.25	37	18	35⅛	26⅝
18	14¼	2,000	17¼	16¼	16¼	Barber Co.	387,149	$10	75c	12-16-37	.50	43⅜	10⅛	38½	21
16⅛	13	10,500	16	14⅝	14⅝	Barnsdall Oil Co.	2,247,974	$5	25cQ	2-1-38	.80	35¼	10	28¼	14⅛
10½	8⅞	19,200	10⅛	9½	10	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	2-15-38	.80	17⅞	7	17¼	11½
34⅝	28¾	9,100	33	31	31⅛	Continental Oil of Delaware	4,682,615	$5	25cQ	12-20-37	1.50	49	24	44⅞	28⅛
8⅞	6¼	7,300	8½	7¾	8	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅜
22⅝	18¼	2,800	21⅝	20	20	Mid-Continent Petroleum	1,855,912	$10	$1	11-1-37	1.15	35⅝	14	30⅞	17¼
17¾	15¼	300	16⅞	16	16	Mission Corporation	1,399,345	N.P.	25c	12-24-37	.45	34	15	29⅞	16¾
22½	18½	10,100	21⅞	18¾	19¼	National Supply	382,591	$25	$2 pf.‡	12-22-37	....	41⅜	17⅝	75½	19⅞
14⅞	11⅞	12,700	14½	13¼	13½	Ohio Oil Co.	6,563,377	N.P.	50cSA	12-15-37	.60	22⅞	9	18	12⅛
15⅞	12	600	14	13	13	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	29¾	11¾	23½	11¾
8⅝	8¼	100	8½	8½	8½	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	.60*	17⅛	7	20⅝	12¼
62½	38	15,700	40¾	38⅞	39⅝	Phillips Petroleum	4,449,052	N.P.	75cQ†	12-1-37	2.50	64	30⅛	52⅜	38⅛
19¼	17	2,900	19¼	18⅜	18½	Plymouth Oil Co.	1,050,000	$5	35cQ	9-30-37	.90	29⅞	13	27⅜	11⅞
13½	11	23,900	13⅜	12	12	Pure Oil Co.	3,281,120	N.P.	25c	12-1-37	....	24⅜	8¾	24⅞	16
7⅞	5⅜	8,400	7⅜	6¾	6¾	Richfield Oil Corp.	3,986,638	N.P.	25c	12-24-37	....	6½	4⅛	..	..
25¾	20	2,700	24½	22	22	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	9-15-37	1.00	54⅛	16	44	30½
18¼	16¼	1,000	17⅞	17⅛	17⅛	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	.25	34¾	14⅞	28¼	14¾
34¾	28	1,500	31¼	29	30	Skelly Oil	1,006,348	$15	50c	9-30-37	....	60⅝	26½	47⅜	19½
16⅜	14⅝	18,800	16	15⅜	15⅜	Socony-Vacuum	31,151,071	$15	30c	12-15-37	.70	23¼	13	17½	12½
33⅞	28⅝	11,400	32⅞	31¼	31⅝	Standard Oil of California	13,014,754	N.P.	80cQ†	12-15-37	1.20	50	27⅛	47⅝	35
35½	33⅛	11,800	35⅜	33⅞	34	Standard Oil (Indiana)	15,196,241	$25	$1Q†	12-15-37	2.40	50	26½	48½	32¾
..	..	No sales	..	..	..	Standard Oil of Kansas	134,841	$10	$5	12-20-37	1.00	43	30⅝	31	25
51⅜	44½	25,600	50⅞	48	49¾	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-37	2.00	76	42	70⅜	51⅛
57	49¾	1,100	57	55⅛	55⅛	Sun Oil	2,156,825	N.P.	25cQ	9-15-37	$1 & 6% Stk.	77½	44½	91	70
3⅜	2½	3,800	3⅛	2⅞	3	Superior Oil Corp.	1,388,079	$1	....	.....	....	7¾	1½	6¾	3
44⅞	38	17,300	43⅞	41⅜	42	Texas Corp.	10,896,858	$25	50cQ	1-2-38	1.50	65½	34¾	55¼	28⅞
4⅞	3⅝	3,900	4⅜	4	4	Texas Gulf Producing Co.	888,134	N.P.	10c	12-23-37	.05	9⅝	2	8⅞	4⅜
9½	7¾	6,200	9	8¼	8¾	Texas Pacific Coal & Oil	888,237	$10	10c	12-1-37	.25	16⅝	5⅜	15¼	7½
15½	14	8,300	15½	14½	14½	Tide Water Associated	6,288,512	N.P.	15c Spl.	12-17-37	.70	21⅝	13⅛	21¾	14¾
21¼	18½	3,200	20⅞	20⅛	20⅛	Union Oil of California	4,386,070	$25	30cQ	2-10-38	1.00	28¼	17½	28½	20¾
23½	22⅛	1,000	23¼	22½	22½	Union Tank Car Co.	1,200,000	N.P.	40cQ	12-1-37	1.20	31½	22	31⅝	22⅝
2⅝	2¼	No sales	..	..	..	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	6¼	1¾	5¼	2⅜

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending Jan. 22 Sales	Week ending Jan. 22 High	Week ending Jan. 22 Low	Week ending Jan. 22 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1937 High	1937 Low	1936 High	1936 Low
9⅜	8		9	8½	—	American Republics Corp.	1,308,049	$10	30c	12-27-37	....	10	6⅝	..	..
10¼	8⅝	900	9⅞	9¼	9⅝	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$1.00	21⅜	7	21	13¼
39	37½	No sales	..	..	..	Buckeye Pipe Line Co.	200,000	$50	75cQ	12-15-37	3.25	51½	36	50	39¾
101¼	100	No sales	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-30-37	7.00	123	95½	124¾	105
2	1⅞	18,700	2	1⅞	1⅞	Cities Service	37,804,394	N.P.	....	6-1-32	....	5⅜	1½	7⅜	3
2⅜	1⅞	2,500	2	1¾	1¾	Cosden Petroleum	399,687	$1	....	.....	....	5½	1½	4½	1½
27½	23¼	4,400	26¼	25	25¼	Creole Petroleum	6,974,356	$5	50cSA†	12-15-37	.50	38¾	20¼	39	19⅞
8¾	* 7	900	8⅛	7⅝	7⅝	Darby Petroleum	351,390	$5	25cSA	1-15-38	.50	18⅝	6½	18⅛	9
3½	3	1,300	3½	3	3	Derby Oil & Refining	263,162	N.P.	....	.....	....	8¾	2¼	6¾	1⅞
31	31	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	11-1-37	4.00	47½	24½	47½	38½
41¾	37½	7,500	41¾	40⅜	41	Gulf Oil Corp.	9,076,202	$25	25cQ	12-1-37	1.50, 100% Stk.	63½	33	59	36
66½	64	2,700	66½	64⅝	66	Humble Oil & Refining	8,923,935	N.P.	62½cQ	12-27-37	1.50	87	54⅞	80	57
18⅞	17⅞	2,800	18⅞	18½	18⅞	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-37	1.25	24¼	14½	24½	19¾
7½	7¼	300	7¾	7¼	7¾	Indiana Pipe Line	300,000	$10	50cSA	11-15-37	.80	15	5⅞	9¾	5½
30⅝	28½	3,800	30	29¾	29⅞	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-37	2.50	39½	23½	39⅝	32⅝
4¼	3¼	100	3¾	3¾	3¾	Kirby Petroleum Co.	500,000	$1	10c	9-15-37	.20	8¾	2⅜	5¾	2⅝
25⅛	18¾	5,000	25	23	23½	Lion Oil Refining	270,000	N.P.	50cQ†	12-24-37	.75	34	12½	17¾	7⅜
9¼	7⅛	3,700	9¼	8½	8⅝	Lone Star Gas	5,382,723	N.P.	20c	12-22-37	.60	14¼	5¼	14¼	9⅞
9⅜	8⅛	3,700	9⅛	8⅜	9⅛	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-37	.50	15¼	6⅜	15⅜	9⅞
7⅝	7¼	400	7½	7¼	7¼	Midwest Oil Co.	998,444	$10	50c	12-15-37	....	14⅝	6¼	..	..
5	4⅝	800	5	5	5	Mountain Producers	1,682,182	$10	30cSA	12-15-37	.60	7⅞	4⅛	8⅜	5
14⅝	13⅞	900	14½	13⅞	13⅞	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-38	1.00	19½	12	23	17⅜
9¼	8	300	8½	8¼	8¼	National Transit	509,000	$12.50	55cSA	12-15-37	.75	12½	7¼	15⅜	9¼
2⅝	1¾	200	1⅞	1¾	1¾	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	5	1⅛	6⅝	1⅝
4½	4	100	4	4	4	New York Transit	100,000	$5	60c Spl.	12-28-37	.35	5⅜	3⅞	6¼	4¼
..	..	No sales	..	..	..	Northern Pipe Line	120,000	$10	25cSA	12-1-37	.40	12¾	5¾	9¾	4⅞
7	5½	15,100	6⅝	5⅞	6¼	Pantepec Oil	1,608,700	N.P.	....	.....	....	9⅝	2¾	10⅛	3¼
3⅜	3	900	3⅜	3¼	3⅜	Root Petroleum Co.	336,045	$1	25c	2-1-37	.50	13¾	2	19¼	4½
4	3⅛	900	3⅝	3½	3⅝	Ryan Consolidated	296,931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅜	4⅜	400	5⅜	5	5⅜	Southern Pipe Line	100,000	$10	25cSA	9-1-37	.25	7¼	3⅞	7⅞	3¼
38½	37¼	500	38½	37½	38	South Penn Oil	1,000,000	$25	$1,15Q†	12-28-37	2.60	56	35	44	32½
22	22	100	22	22	22	Southwest Penna. Pine Lines	35,000	$50	50cQ	12-31-37	13.00	42	20	60	44
18	17	1,000	18	17⅝	18	Standard Oil of Kentucky	2,604,790	$10	40cQ†	9-15-37	1.35	21⅛	14¾	23⅜	17⅛
..	..	No sales	..	..	..	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	19⅜	1,700	21¼	20¾	20¾	Standard Oil of Ohio	753,740	$25	75cQ†	12-15-37	2.00	45	16	40	21¾
3¼	2⅞	3,200	3¼	3	3	Sunray Oil	1,910,119	$1	10c	12-24-37	.10	4⅞	2	5	2⅝
4⅜	4	500	4⅛	4⅛	4⅛	Texon Oil & Land	336,028	$2	15cQ	1-3-38	.60	7⅝	2	9¾	5⅜
5¼	4¼	13,200	4⅞	4⅜	4½	United Gas Corp.	7,818,959	$1	10c	9-15-37	.20	13⅝	3	10¾	4

†Includes extras. ‡Payable in Canadian funds.
Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

PERSONAL

DANIEL E. STINES, formerly employed in the process engineering department of Standard Oil Company, in Bayway, N. J., has been made technical assistant to the London refining office, and he sailed for England last Saturday on the Lafayette. Mr. Stines joined the company in 1929, following his graduation from Cornell University.

A. A. CARREY, engineering representative of the Long Beach Harbor Commission, and DUDLEY A. TOWER, field superintendent of Union Oil Company, at Bakersfield, Calif., were the principal speakers at the January meeting of the Los Angeles Basin Chapter, American Petroleum Institute, Division of Production held at the Shell recreation hall at Long Beach.

C. A. MILLER, safety director of the Texas Company at Houston, Tex., is on a business trip to New York.

G. H. BLANKENSHIP, independent oil operator, has returned to Centralia, Ill., where he has been located since the Illinois Basin boom began last year. He spent two weeks transacting business in Tulsa and other Oklahoma oil centers.

CHARLES A. DANIELS, division production superintendent for Phillips Petroleum Company at Amarillo, Tex., is busy completing arrangements for the program of the Mid-Continent district of A.P.I. to be held in Amarillo February 17-18. Mr. Daniels is program chairman.

FRANK STAHL, secretary of the annuities and employe benefit organization within Standard Oil Company of New Jersey, is en route to Aruba where a subsidiary, Lago Oil & Transport Corporation, operates one of the world's largest refineries. MRS. STAHL accompanied her husband.

WILLARD E. SIMPSON, San Antonio, Tex., was elected president of the Texas state society of the National Society for Professional Engineers last week. In Texas petroleum engineers comprise the largest classification in this society. W. E. SEAHOLM of Austin was named second vice president, and R. S. GUINN, also of Austin, secretary-treasurer.

H. D. HANCOCK, C. E. WEGER, and W. A. SENSHEIMER, officials of Cities Service Oil Company, New York, arrived in Shreveport, La., last week to confer with executives of Arkansas Natural Gas Corporation and other affiliated companies. They were joined later by T. W. TUTWILER, director and member of the executive committee for Cities Service.

E. C. BOTHWELL, vice president, and K. C. HEALD, chief geologist, Gulf Oil Corporation, Pittsburgh, Pa., have been making a tour of inspection of the company's property in West Texas. They were accompanied by W. B. PYRON, executive vice president.

N. C. McGOWEN, president, and R. H. HARGROVES, vice president, and M. A. ABERNATHY, vice president of the United Gas Pipe Line Company and United Oil Pipe Line Company; B. M. NOWERY, vice president of Union Producing Company, and H. E. RANDELL, sales manager of the United Gas Company and Houston Gulf Gas Company, headed a party of 25 representatives of these companies on their annual sales tour.

A. V. GROESBECK and J. V. STRANGE, vice presidents; H. P. CARROLL and A. D. KERR, operating managers, and D. A. STRICKLAND, sales manager of United Gas Company, distributing branch, Houston, Tex., were principal speakers at a series of district meetings held for distributors of natural gas. The meetings were held at Opelousas, La., and Beaumont, New Braunfels and Jacksonville, Tex.

G. LEGH-JONES, former president of Shell Oil Company, has been elected a director of the Royal Dutch-Shell group companies in London and managing director of Anglo-Saxon Petroleum Company, Ltd. Mr. Legh-Jones went to the Pacific Coast in 1922 to head the Shell organization in the West, and resided in California until July, 1934, when he was called to London to become general manager of Anglo-Saxon Petroleum Company, Ltd. While in California Mr. Legh-Jones represented Shell in the movement for oil conservation.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Josiah Barrett, 66, inventor and founder of the Duff Manufacturing Company, tool makers, dies in Pittsburgh.

Pennsylvania Grade oil is selling for $2.50 per barrel, the highest price since the spring of 1895.

J. Edgar Pew resigns from the Sun Company, with which he has been connected for many years, and for which he served as general agent for 12 years, and will go into the oil business for himself in Oklahoma.

Mexico exported 5,557,328 barrels of oil in 1912.

20 YEARS AGO

Dr. S. G. Kennedy, Tulsa pioneer, who made a large fortune in oil, plans to erect a $1,000,000 office building on the site of his original Tulsa homestead.

The report that the Prairie Oil and Gas Company will buy the Empire Gas and Fuel Company's oil properties for $100,000,000 is denied by both parties.

J. Elmer Thomas is president of the Southwestern Association of Petroleum Geologists, which will shortly meet in Oklahoma City.

Humphrey Petroleum Company sells a half interest in its pipe line in Oklahoma to E. N. Gillespie, Joseph Guffey and others for $1,500,000.

10 YEARS AGO

The first producing well east of the Mississippi River in Louisiana was completed on Sorrento dome.

William B. Clarke, veteran oil man and former sheriff of McKean County, Pennsylvania, dies at his home in Eastland, Tex.

Joseph Seep, widely known operator of Oil City and Titusville, Pa., was reelected chairman of the board of South Penn Oil Company, despite his 89 years.

An extension of the K.M.A. field featured field operations in Wichita Falls, Tex., district. Producing limits were pushed 1 mile west with a 30-barrel shallow well.

J. C. HUNTER of the independent firm of Grisham & Hunter of Abilene, Tex., president of the West Central Texas Oil and Gas Association, is conducting a membership campaign for his association and expects to pass the 2,000 mark next week.

WILLIAM GROUNDWATER, superintendent of transportation of Union Oil Company, has been elected a director of the Los Angeles Chamber of Commerce and will be chairman of the harbor, foreign commerce and shipping committee.

ROBERT B. BOSSLER, production engineer for Brundred Oil Corporation, Oil City, Pa., has been appointed chairman of the production advisory committee of the Pennsylvania Grade Crude Oil Association, succeeding C. C. HOGG, National Petroleum Company, Titusville, Pa.

B. M. NOWERY, vice president of United Gas Pipe Line Company, presided at the company's annual sales meeting in Longview, Tex. Presented at the meeting was a paper, "Our Companies Today and Problems Ahead of Us" by N. C. McGOWEN, president of Shreveport.

H. I. CARO, managing director of R. G. Lane, Ltd., London, England, and JOHN CHILLMAN, recently appointed a director of R. G. Lane, Ltd., oil brokers and merchants, are on their way to the United States. This company has been an important buyer of Artesia, N. M., crude.

T. L. FONTAINE, chief clerk in the production department, Humble Oil & Refining Company, has been chosen the most outstanding young man in Houston, Tex., for 1937. The "key" of the Junior Chamber of Commerce, given in recognition of this distinction, was conferred upon him at his inaugural as new president of the organization.

PARAGRAPHS

H. C. SKIDMORE, production superintendent for the Gerhig Company, is in charge of the company's newly opened office in the City Bank Building, Shreveport. Mr. Skidmore has been active in the Shreveport area, where the company has producing properties.

FRANCIS E. POWELL, JR., has been appointed general manager of the marine sales department of Socony-Vacuum Oil Company, Inc. He is now in England and will return to New York to assume his new post. Mr. Powell, an American, attended Cambridge University in England and joined the Anglo-American Oil Company, Ltd., in London in 1924. In 1930 he became associated with Stanco, Inc., a subsidiary of the Standard Oil Company of New Jersey, working from Stanco's central office in New York. He returned to England in 1933 and became a director of the Vacuum Oil Company, Ltd., London. He was in charge of marine lubricating oil sales while in England.

PAUL D. TORREY, geologist, Sloan & Zook, Bradford, Pa., spent several days in the Houston, Tex., office of the firm. He left by plane for Tulsa before returning home.

WALTER C. TEAGLE, chairman of Standard Oil Co. (New Jersey), was among the 50 business leaders of the nation called into conference last week at Washington by PRESIDENT ROOSEVELT.

J. A. WELCH, general sales manager of the Arkansas Fuel Oil Company, was the principal speaker at a retail sales training conference conducted by the company at Shreveport.

W. PURVES TAYLOR, secretary of the Associated Petroleum Industries of Pennsylvania, has announced that the offices of the organization have been moved from Philadelphia to Harrisburg.

DR. ARMSTRONG PRICE, consulting geologist, Corpus Christi, Tex., was the principal speaker at the South Texas Geological Society meeting at Corpus Christi, January 21. His subject was "Geology of the Rio Grande Delta."

W. S. WADE, president of Southern Counties Gas Company, was host to other officers, directors and employes of the company at the twenty-seventh annual sales dinner held in Los Angeles in celebrating the installation of 170,000 domestic gas meters in the southern part of California.

COL. W. B. PYRON, vice president of Gulf Oil Corporation in charge of the southern district at Houston, Tex., is making an inspection tour of the company's West Texas Permian Basin properties, in company with F. J. ADAMS, general agent for the Gulf company at Fort Worth, Tex., and other officials.

J. A. BIRMINGHAM, division manager of the production department, the Texas Company, Houston, Tex., is in New York City on a short business trip. He is expected to return with L. E. BARROWS, manager of the production department, who has been visiting the eastern city for several weeks.

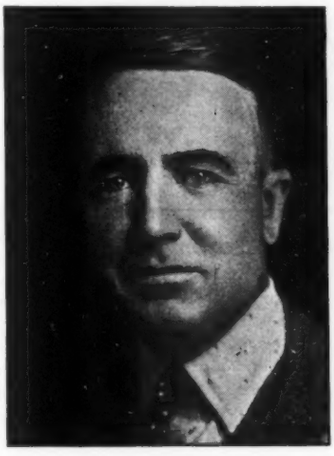
C. B. WILLIAMS, assistant manager of the West Texas-Mexico division of the Texas Company in Fort Worth, Tex., has been named manager of production for Colombian Petroleum Company with headquarters in Cucuta, Colombia, South America, a subsidiary of the Texas Corporation. Mr. Williams has been assistant in Fort Worth to C. J. McMAHON, general manager.

E. R. SHAW, former assistant personnel director with the Carter Oil Company in Tulsa, has been transferred to the Shreveport office of the Standard Oil Company of Louisiana, where he will take charge of the personnel department for production and pipe line departments of the company.

B. M. GIVENS, of Sun Oil Company, will present a paper on "The Prevention and Treatment of Emulsions in the East Texas Field" before the February 15 meeting of the East Texas chapter of the American Petroleum Institute. A second paper to be presented will be "The Completion of Wells in the East Texas Field by the Reverse Circulation Method" by F. G. BECKMAN. The meeting will be held in Kilgore, Tex.

His Job Is Conservation

As Arkansas enters upon what is expected to prove its most successful year in the oil industry, the responsibility of seeing that this success is extended into future years rests largely on the shoulders of O. C. Bailey. Mr. Bailey is a member of the oil partnership of Bailey & Trimble, operating in the Smackover and Shuler fields of Arkansas and the East Texas field, but he is becoming better known as chairman of the Arkansas State Board of Conservation. In this latter capacity, which takes about 75 per cent of his time, he is helping to lay the groundwork for conservation and proration of the state's new production. No salary goes with the office or with those of his colleagues on this board, who represent other oil interests in the state. Through generous giving of their time and work, however, they are performing a service to the state in formation of rules and regulations for the conservative development of new reserves recently opened in the Miller County, Rodessa, and the Shuler and Buckner fields.



O. C. BAILEY

Mr. Bailey, although only 43, is a veteran in the oil business, having entered operations in the Smackover field with J. D. Trimble in 1923. He was born in Blevens, Ark., and received an A.B. at Ouachita College in 1914. Following graduation he was employed in the circuit clerk's office in Hempstead County for two years, then serving as circuit clerk from 1916 to 1920. He went in 1921 to El Dorado, his present home. Governor Bailey appointed him to the Conservation Board in February, 1937, and his election as chairman followed.

GEORGE B. BARHAM, Shreveport drilling contractor, recently returned after an extended trip by plane to Midland, Hobbs, Ponca City and Fort Worth.

JOHN R. SUMAN, vice president and director of the Humble Oil & Refining Company, Houston, Tex., was the guest speaker at the annual banquet of the Midland, Tex., chamber of commerce, January 21.

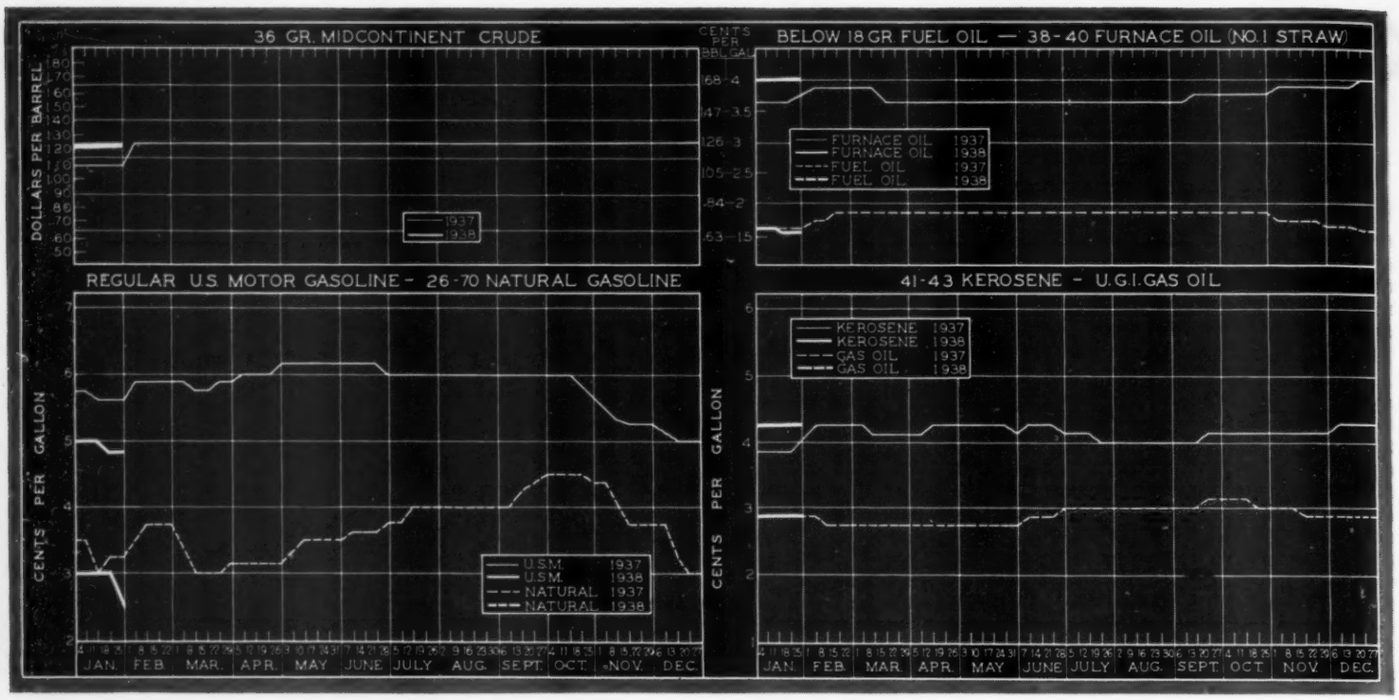
R. L. HAGUE, head of the Standard Oil Company of New Jersey marine department, has been made a vice president and director of Standard Oil Company of New Jersey (Delaware).

W. V. VIETTI, chief petroleum engineer, South Texas division, the Texas Company, Houston, Tex., left January 23 for New York, where he will sail for Colombia, S.A., to assume his new connection with the Texas Company at Bogota.

C. R. BURGESS, of Standard Oil Company, discussed operations in the Medicine Bow field at the spring meeting of the Taft chapter of the California Natural Gasoline Association held in the Fox Hotel at Taft January 20.

W. S. ACKERMAN, chief statistician and assistant to H. T. EARL, manager of transportation of Associated division of Tide Water Associated Oil Company, is recuperating from an illness and expects to be back at his office in San Francisco shortly.

MAJOR FRANK HOLMES of London, England, original concessionaire of Bahrein Island, sailed from New York January 26 after spending two weeks in New York on business. He drilled the first water wells on the island and was instrumental in interesting oil companies in its petroleum possibilites.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Group 3 Refiners Anxiously Watch Heating Oil Stocks; Naturals Dip

By T. F. SMILEY

Heating oils, which had seemed invulnerable, were being watched with something approaching anxiety in the Group 3 market this week. Unusually mild weather over wide areas had wrecked forecasts. Gasoline, though benefiting in point of gallonage from the same conditions that had curtailed consumption of furnace distillates, was in a gloomy state marketwise as stocks continued to record alarming highs. Natural gasoline ran into expected trouble, and buyers were having pretty much their own way.

Stocks Cause Uneasiness

It was easy to understand why refiners were beginning to feel concerned over the heating-oil outlook. Figures provided by the American Petroleum Institute show the stocks of gas oil and fuel oil held on the East Coast and Gulf Coast are 53 per cent higher than they were at this time last year. Those in Oklahoma, Kansas, and Missouri are 19 per cent higher. In Illinois, Indiana, and Kentucky, often referred to as the Chicago area, they are up 27 per cent.

In the Oklahoma-Kansas-Missouri territory, which comprises most of the area commonly designated as the Mid-Continent, the increase in stocks may not seem excessive, in view of the yearly increase in demand; but it is significant that in this same territory gasoline stocks are only 7½ per cent higher than they were a year ago. Refiners who in past years have reached the end of January with burdensome stocks of fuel oil on hand have not wasted much time in hopeful waiting, but usually have taken prompt action to move them by the time-tried method of reducing prices.

Nothing definitely reassuring developed in the past week to lessen the cheerlessness of the gasoline market. The imperative necessity of halting the perpendicular rise of stocks, if a demoralized market next summer is to be avoided, becomes more evident daily. Various Mid-Continent refiners have shown in a practical way their readiness to help in applying the one remedy that offers promise, namely reduction of runs to stills.

The Pure Oil Co. has closed its Muskogee, Okla., plant for a minimum of 30 days. It had been running about 8,000 bbls. of crude daily. In the announcement of the shutdown the company referred to uneconomic conditions prevailing in the oil industry and to the fact that oil products can be bought more cheaply than they can be manufactured. While the plant is down a new combination high-pressure unit will be installed. Barnsdall Refining Corp. has shut down its neutral and bright stock plant in Barnsdall, Okla., and it has curtailed runs at its Wichita, Kans., and Barnsdall plants 1,000 bbls. a day. It closed its Okmulgee, Okla., plant completely last November. The Continental Oil Co. has closed its neutral plant in Ponca City, Okla. Exerting a beneficial influence on general conditions, was the announcement that Humble Oil & Refining Co. would cut the operations of its Baytown, Tex., refinery 7,000 bbls. daily. This followed the action of Standard Oil Co. of New Jersey in curtailing its daily refinery throughput 15,000 bbls.

Refined Oil Market Barometer

Increasing vigor is shown by heating oils as cooler weather in the northern and eastern states causes a sharpened demand. Regulatory steps being taken by states and curtailment measures adopted by refiners improving trade sentiment. Large stocks of gasoline and their rapid rate of increase exciting concern. Lubricants and heavy residual fuels remain lifeless.

MID-CONTINENT. Gasoline weak. Heating oils steady. Naturals off.

EAST COAST. Light fuels improved. Gasoline easy. Lubricants inactive.

GULF COAST. Gasoline weaker. Kerosene and heating oils soft. General market dull.

CALIFORNIA. Gasoline and kerosene lower. Fuel oil soft. Light fuels easy.

PENNSYLVANIA. Kerosene and light fuels in greater demand. Cylinder stocks improved.

CHICAGO. Kerosene strong. Furnace oils firm. Heavy fuels and gas oil sluggish.

Sharp Break in Naturals

Natural gasoline, which had been increasingly nervous for weeks, experienced a sharp break, and a buyers' market prevailed. Gulf Coast demand had dried up and field stocks were growing fast, with the result that quotations fell precipitately. The slashed prices seemed to attract little new business; and small manufacturers, with inadequate storage facilities, were hunting outlets so assiduously that nobody felt sure the end of the slump had been reached. A falling market in the naturals is doubly hard to head off at this season because, among other reasons, large volumes come of necessity as a by-product of natural-gas production, now at the height of its season.

Cold Snap Eases Fuel Oil Situation in Markets on the Eastern Coast

By H. STANLEY NORMAN

NEW YORK, Jan. 24.—Colder weather throughout the North Atlantic seacoast district and ascending tanker rates for movement of products from the Gulf Coast to Cape Hatteras and points north combined to ease the pressure on all fuel oils last week. Of course, part of the slack was removed from the fuel oil market in the preceding week when Standard Oil Co. of New Jersey led a reduction of a quarter cent per gallon on most fuel oils. Almost simultaneously with the reduction in fuel oil prices, thermometer readings in this and other North Atlantic consuming districts dropped to the lowest levels in two years.

As anticipated throughout the winter, the fuel oil market responded promptly to the drop in temperatures. There was no change in the tank-car market level established the week before, but volume of business was much improved and established a more optimistic note in this particular market. Kerosene prices were adjusted downward a half cent to the tank-wagon trade in Atlantic City and Newark, N. J., as of January 12 by Standard of New Jersey, meeting previously existing quotations on this material in the five boroughs of New York. Kerosene postings in other northern New Jersey points in direct competition with Newark and Atlantic City dealers were adjusted accordingly.

The New York harbor motor fuel market continues on the easy side of quotations, suffering from the colder weather and snow in most sections from New York north which made driving disagreeable. Gasoline of 65 minimum octane rating was available in the New York tankcar market at 6¾ cents and a few scattered sales were reported a shade below. A bulk of the business, however, is on a contract basis with open market sales confined to small volumes.

The unsettled motor fuel market was particularly acute in the Newark, N. J., area where one company offered 65 octane gasoline to dealers operating their own trucks at 6¾ cents at bulk terminals. The tank-wagon price was a half cent higher for delivery by company trucks. This and other similar instances contributed to unsettled retail price conditions.

Disturbances in the tankcar and tank-wagon gasoline market were also reported from Baltimore and Boston. Other points, including Buffalo, Rochester, Syracuse, Philadelphia and New York were on reasonably stable price schedules.

The cold weather which forced the mercury below zero as far south as Philadelphia cut into automobile operation materially. The freezing followed snow ranging from 1 inch in the more southern parts to a foot or more in parts of New England left highways outside of the cities in slippery condition. Car operations were reduced to necessity for two or three days contributing further to a dull motor fuel season. In general, however, this winter's gasoline consumption is still holding at a slightly increased level compared to the winter of 1936-37.

Insufficient time has elapsed to determine the refining policies of other operators following announcement by Standard of New Jersey that it was reducing runs for duration of January. The Jersey company's program contemplates an average reduction of 15,000 bbls. per day in throughput of its plants and those of domestic subsidiaries in an effort to halt accumulation of additional burdensome stocks. Several other refiners in this and other sections have instituted voluntary reductions in throughput in some instances by a greater margin and in others by less than the Jersey company program.

Announcement from Austin last week that the Texas Railroad Commission has issued an order calling for statewide production shutdowns for the next six Sundays eased anxiety over the crude market in this section. There was fear previously that curtailment of refinery operations in line with seasonal demands for motor fuel and disappointing heating oil consumption might combine to strangle an already weakened crude market. The improved fuel oil demand for the past 10 days has increased volume turnover appreciably, but other factors have entered into the picture to nullify entirely or partially any benefits which might otherwise have accrued to the refiners. Foremost is the ascending tanker charter rate and the relative scarcity of boats for coastwise movement. Rates on dirty boats for movement of fuel oil from the Gulf Coast have touched a high of 42 cents per barrel in the current upward movement of the transportation chart. Vessels for transportation of gasoline have been chartered at 39 to 40 cents and movement of kerosene for 41 cents has been reported in recent chartering.

More than 25 boats were reported chartered on the Atlantic and Pacific coasts last week for movement of petroleum to Japan. Several, probably no less than eight boats for Japanese service, were chartered on the Atlantic Coast and will load on the Gulf for their first trips. In some instances, the boats chartered on the Atlantic Coast will make additional voyages from California. For Gulf Coast loading and delivery in Japan, the one trip charter rate prevailing last week was from 31 to 32 shillings. One of the boats engaged for Japanese service was chartered for a three-year period. Another was engaged for nine consecutive voyages. Most of the chartered boats engaged for transatlantic service, mostly for loading in February, will move on a basis of 29 to 30 shillings for one trip. One boat engaged for 15 consecutive trips from the Gulf Coast to the United Kingdom was chartered at 19 shillings 6 pence for the required period.

Boats for movement of crude from the Gulf Coast to north of Cape Hatteras are currently chartered at about 37 to 38 cents per barrel. Throughout the structure, charter rates have increased from 30 to 50 per cent since the first of December, thus practically nullifying the advantage of buying material at reduced levels on the Gulf Coast.

Bunker C fuel oil continued last week as one of the most stable products. The previous quotation of $1.25 per barrel in New York and other North Atlantic harbors was one of the few unchanged when light burning oils and diesel fuel were reduced a quarter of a cent.

All grades of cylinder stock were reported in greater demand in the western Pennsylvania territory last week. Previous prices were unchanged, but the improvement in trading was considered encouraging to suppliers in view of the long downward trend since November. Part of the revival of interest came from export dealers but interrefinery trading accounted for most of

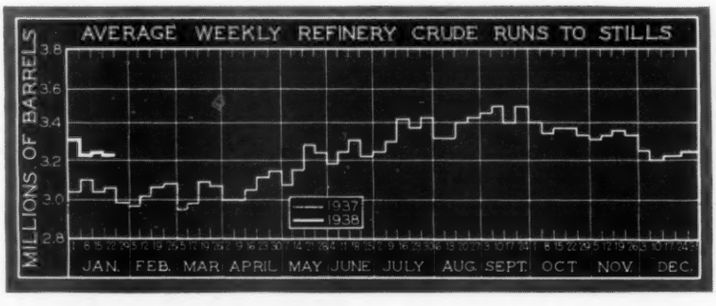
(Continued on Page 232)

A. P. I. Weekly Refinery Statistics

Week Ending January 22, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	502,000	19,514,000	11,748,000
Appalachian	88.4	115,000	3,212,000	1,190,000
Indiana, Illinois, and Kentucky	92.4	442,000	13,406,000	6,777,000
Oklahoma, Kansas, and Missouri	84.7	254,000	7,223,000	3,573,000
Inland Texas	56.6	132,000	2,564,000	1,725,000
Texas Gulf	95.7	681,000	12,204,000	10,429,000
Louisiana Gulf	96.6	140,000	2,586,000	3,515,000
North Louisiana and Arkansas	63.7	41,000	490,000	461,000
Rocky Mountains	69.7	46,000	1,896,000	699,000
California	90.9	550,000	14,940,000	75,526,000
Total reported	89.0	2,903,000	78,035,000	115,643,000
Estimated unreported	.....	317,000	4,750,000	2,790,000
*Estimated total	.....	3,220,000	82,785,000	118,433,000
*Estimated total previous week	.....	3,240,000	80,947,000	118,962,000
*January 23, 1937	.....	3,055,000	68,180,000	103,441,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES BASIS)

Week ending January 15, 1938	303,679,000 barrels
Week ending January 8, 1938	303,078,000 barrels
Week ending January 16, 1937	287,640,000 barrels

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of January 25, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline tax	Inc. tax	Kero. tank wag.
Chicago, Ill.	15.3	13.3	4.0		10.2
Decatur	15.3	13.1	4.0		10.2
Joliet	15.3	13.8	4.0		10.2
Peoria	15.3	13.8	4.0		10.2
Quincy	15.1	13.6	4.0		10.0
Davenport, Ia.	15.3	13.8	4.0		‡13.2
Des Moines	15.1	13.6	4.0		‡11.0
Mason City	15.4	13.9	4.0		‡13.3
Sioux City	15.3	13.8	4.0		‡13.2
Duluth, Minn.	17.0	15.5	5.0		10.9
Mankato	16.7	15.2	5.0		10.6
Minneapolis	16.7	15.2	5.0		10.6
Lacrosse, Wis	16.7	15.2	5.0		10.6
Green Bay	17.0	15.5	5.0		10.9
Milwaukee	16.5	15.0	5.0		10.4
Detroit, Mich.	15.1	13.6	4.0		9.8
Grand Rapids	16.3	14.8	4.0		11.0
Saginaw	16.1	14.6	4.0		9.1
Evansville, Ind.	16.8	15.3	5.0		†10.7
Indianapolis	16.9	15.4	5.0		†10.8
South Bend	17.2	15.7	5.0		†11.1
Fargo, N. Dak.	16.7	15.2	4.0		11.6
Minot	17.9	16.4	4.0		12.8
Huron, S. Dak.	17.1	15.6	5.0		11.0
Kans. City, Mo.*	14.6	13.1	4.0		9.5
St. Louis*	14.9	13.4	4.0		9.8
St. Joseph	14.6	11.4	4.0		9.5
Wichita, Kans.	14.1	12.4	4.0		8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Iowa kerosene prices include 3-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank wag.
Atl'tic City, N. J.	12.75	11.25	4.0	8.5
Newark	12.75	11.25	4.0	8.5
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	17.45	14.95	6.0	12.9
Norfolk	16.25	13.75	6.0	11.5
Petersburg	16.55	14.05	6.0	11.7
Richmond	16.55	14.05	6.0	11.7
Roanoke	17.75	15.25	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.6
Hickory	19.15	16.65	7.0	13.0
Mt. Airy	18.95	16.45	7.0	12.8
Raleigh	18.25	15.75	7.0	12.1
Salisbury	18.75	16.25	7.0	12.7
Charleston, S. C.	17.25	14.75	7.0	11.1
Columbia	18.25	15.75	7.0	12.1
Spartanburg	18.95	16.45	7.0	12.9

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5-cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero tank wag.
Atlanta, Ga.	21.0	18.0	7.0*	†14.0
Augusta	21.0	18.0	7.0	*14.0
Macon	21.0	18.0	7.0	*14.5
Savannah	19.5	16.5	7.0	*12.0
Birm'ham, Ala.	22.0	19.0	8.0	12.6
Mobile	22.0	19.0	9.0	11.0
Montgomery	22.0	19.0	9.0	†13.0
Jackson, Miss.	20.0	17.0	7.0	*13.0
Vicksburg	20.0	17.0	7.0	*13.0
Jacks'ville, Fla.	22.5	17.5	8.0	†11.0
Miami	20.5	17.5	8.0	†12.5
Pensacola	22.5	19.5	9.0	12.0
Tampa	20.5	17.5	8.0	10.5
Lexington, Ky.	19.5	16.5	6.0	11.0
Covington	18.5	15.5	6.0	11.0
Louisville	19.0	16.0	6.0	10.5
Paducah	19.5	16.5	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline tax	Inc.	Kero. tank wag.
Denver, Colo.	15.0	5.0		11.5
Grand Junction	19.0	5.0		15.0
Pueblo	14.0	5.0		10.5
Casper, Wyo.	17.0	5.0		11.5
Cheyenne	16.0	5.0		13.0
Butte, Mont.	19.5	6.0		15.5
Billings	19.5	6.0		15.5
Helena	19.5	6.0		15.5
Great Falls	19.5	6.0		15.5
Salt Lake City, Utah	19.5	5.0		16.0
Twin Falls, Ida.	21.0	6.0		18.0
Boise	21.5	6.0		18.0
Albuquerque, N. M.	17.5	*6.5		12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank wag. con'r.	Gasoline Di-vided dlr.	Gasoline tax	Inc.	Kero. tank wag.
Ohio points	16.0	15.00	5.0		*13.5

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline tax	Inc.	Kero tank wag.
Albany, N. Y.	14.5	12.5	5.0		9.0
*Met. N. Y.:					
M'nh'tn, Br'nx	14.5	12.5	5.0		8.75
Staten Island	14.5	12.5	5.0		8.75
Q'ns. & Brklyn	14.5	12.5	5.0		8.75
Buffalo	14.0	13.04	5.0		7.5
Rochester	15.0	13.17	5.0		8.5
Syracuse	14.5	13.12	5.0		9.0
Boston, Mass.	13.00	11.5	4.0		8.0
Portland, Me.	14.5	12.7	5.0		8.75
Manch'ter, N. H.	15.0	13.0	5.0		9.0
Burlington, Vt.	14.5	12.9	5.0		9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.0	22.0	6.0	‡17.0
Reno, Nev.	20.0	21.0	5.0	13.0
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	22.5	23.5	6.0	16.0
Tacoma	20.0	21.0	6.0	13.5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline tax	Inc.	Kero. tank-wag.
Omaha	17.7	16.2	6.0		10.5
McCook	18.4	13.5	6.0		11.2
Norfolk	18.1	16.6	6.0		10.9
North Platte	18.5	17.0	6.0		11.3
Scotts Bluff	19.2	16.0	6.0		12.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.75	17.25	*10.0	†12.0
Baton Rouge	17.75	15.25	8.0	12.0
Alexandria	18.25	15.75	8.0	10.5
Lafayette	18.75	16.25	8.0	13.0
Lake Charles	18.75	16.25	8.0	12.5
Shreveport	17.25	14.75	8.0	9.5
Kn'xv'le, Tenn.	20.75	18.25	8.0	14.0
Memphis	18.75	16.25	8.0	12.0
Chattanooga	20.25	17.75	8.0	13.5
Nashville	19.75	17.25	8.0	11.5
Bristol	19.50	18.25	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1 cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	13.25	12.25	5.0	10.5
Pittsburgh	15.0	13.0	5.0	11.0
Allentown	14.25	12.75	5.0	11.0
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	11.0
Altoona	15.0	13.0	5.0	11.0
Dover, Del.	14.5	....	5.0	11.0
Wilmington	14.0	....	5.0	11.0
Springf'd, Mass.	13.5	....	4.0	8.5
Worcester	14.3	....	4.0	9.0
Hartford, Conn.	13.6	....	4.0	8.5
New Haven	13.5	....	4.0	8.0
Providence, R. I.	13.3	....	4.0	8.5

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline tax	Inc.	Kero. tank wag.
Muskogee, Okla.	14.5	5.0		7.0
Oklahoma City	14.0	5.0		8.0
Tulsa	14.0	5.0		6.0
Ft. Smith, Ark.	14.75	5.0		8.0
Little Rock	17.25	7.5		9.8
Texarkana	14.0	5.0		8.5

Texas

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Dallas, Tex.	14.0	18.5	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	14.5	18.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N.S.	24.0	8.0	18.8
St. John, N.B.	24.0	8.0	18.8
Montreal, Que.	21.0	6.0	17.8
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	27.0	7.0	22.0
Saskatoon, Sask.	29.8	7.0	24.8
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	24.0	7.0	19.0
Vancouver, B.C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Standard Oil Co. (Indiana) January 12 advanced tank-wagon kerosene 1.1 cents at Mankato, .9 cent at South Bend, 1 cent at Kansas City and .5 cent at St. Joseph; January 20 reduced dealer gasoline .7 cent at Decatur.

Standard Oil Co. of New Jersey January 12 reduced tank-wagon kerosene .5 cent at Atlantic City and Newark; January 13 reduced dealer gasoline 1 cent at Parkersburg.

Standard Oil Co. of Nebraska January 15 reduced dealer gasoline 1.5 cents at McCook.

Continental Oil Co. January 19 reduced dealer gasoline 2 cents at Pueblo.

Imperial Oil Ltd. January 13 reduced tank-wagon gasoline 1.7 cents at Brandon.

New York Market

(Continued from Page 231)

the actual turnover. Refiners continued to offer 25 pour test cylinder stock at 15 cents with prices ranging up to 19 cents for better grades. Neutral oils were unchanged both in price and in trading. Kerosene and light fuel oils were in greater demand at unchanged prices in western Pennsylvania, but wax prices were lowered from one- to two-tenths of a cent per pound. Wax prices at New York and New Orleans were also quoted three-tenths of a cent lower at around 2.35 to 2.40 cents per pound for the crude scale quality. Fully refined waxes were unchanged.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of January 25, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.03⅞	.04
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05
60-62 400 grades:		
62 oct. and below	.03⅞	.04
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05
64-66 375	.04½	.04⅝
68-70 360	.04⅞	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03⅞	.04
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05
60-62 400	.04	.04¼
64-66 375	.04½	.04⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)

U. S. Motor grades:		
62 octane and below	.04½	.04⅝
63-66 octane	.04⅝	.04⅞
67-69 octane	.05	.05¼
70-72 octane (regular)	.05½	.05⅞

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04⅝	.04⅝
67-69 octane	.05	.05¼
70-72 octane (regular)	.05½	.05⅝

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04	.04¼
63-66 octane	.04⅜	.04⅝
67-69 octane	.04⅝	.05
70-72 octane (regular)	.05	.05¼
60-62 400 grades:		
62 octane and below	.04	.04¼
63-66 octane	.04⅜	.04⅝
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.05	.05¼
64-66 375	.04¾	.05
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04⅝	.04⅞
60-64.9 octane	.06½	.06¾
65-70 octane	.06¾	.07
64-66 390	.04⅝	.04⅞
68-70 350	.04⅞	.05

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07	.08½
58-60 400, 65 oct. and higher	.08	.09

EAST COAST (Domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.07	.07¼
Philadelphia	.07	.07¼
Boston	.07½	.07¾
Baltimore	.07	.07¼
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.07½	.07⅝
Philadelphia	.07⅛	.07⅜
Boston	.07¼	.07⅝
Baltimore	.07⅛	.07½
Charleston, S. C.	.07¾	.08

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05½
60-64.9		.05⅛
65 octane and higher	.05½	.05⅝

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.04⅝	.04⅞
52-54 450 (blending)	.04⅝	.04⅞
54-56 450 (blending)	.04⅝	.04⅞

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02½
Grade 18-55		.03

NORTH TEXAS—

Grade 26-70		.02½
Grade 18-55		.03

CALIFORNIA—

75-85 375-390	.06½	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70		.02⅞

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110 flash, 540-550 e.p.	.04¼	.04⅜
41-43 gr., 300-520 e.p., 110-125 flash, 500-520 e.p.	.04¼	.04½
46-48 gr., 210-230 l.b.p., 480 max. e.p.	.04¾	.04⅞

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04¼	.04⅜
42-44	.04⅜	.04½

NORTH TEXAS—

41-43	.04¼	.04⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04½	.04⅝

ARKANSAS (Ark., N. La., Miss. del.)—

41-43		.04⅝

PENNSYLVANIA (inland refineries)—

45	.05½	.05⅝
46	.05⅝	.05¾
47	.05¾	.05⅞

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05¾	.06¾

NEW YORK (Bayonne, N. J.)—

41-43		.06

***GULF COAST (domestic)—**

41-43	.05	.05⅛

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.04⅛	.04¼
No. 1 straw, 38-40	.04	.04⅛
No. 2 straw, 32-36	.03⅞	.04
No. 2 dark, 32-36	.03¾	.03⅞
No. 3 zero to 15, 28-32	.03½	.03⅝
No. 3, 15 and above, 28-32	.03	.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42	.04⅛	.04¼
No. 1 straw, 38-40	.04	.04⅛

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅝	.03¾

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03⅞	.04

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-40	.04⅛	.04¼
No. 1 straw, 38-40	.04	.04⅛
No. 2 straw, 32-36	.03⅞	.04
No. 2 dark, 32-36	.03¾	.03⅞
No. 3, zero to 15, 28-32	.03½	.03⅝
No. 3, 15 and above, 28-32	.03	.03⅛

NEW YORK (Bayonne, N. J.)—

*No. 1		.06
*No. 2		.05¼
*No. 4		.05

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.80	.85
Below 18 fuel oil, industrial	.67½	.72½

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.80	.85
Below 18 fuel oil, industrial	.67½	.72½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.03	.03⅛
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.80	.90
No. 5, 15 and above (18-22)	.77½	.85
No. 6, low cold test, 10-16	.72½	.80
No. 6, 15 and above (10-16)	.55	.62½

PENNSYLVANIA (inland refineries)—

36-40	.04⅞	.05⅛

CALIFORNIA

Los Angeles:		
30-40 gas oil, per bbl.	1.50	1.70
24 plus diesel, per bbl.	1.50	1.70
24 plus diesel (bunkers)	1.60	1.70
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.85	1.00
12-17 (tankcars)	.80	1.00
10-17 (high sulfur)	.65	.95
San Joaquin Valley:		
10-18 (tankcars)	.60	.85
24 plus diesel, per bbl.	1.50	1.70
San Francisco:		
24 plus diesel, per bbl.	1.55	1.70
24 plus diesel (bunkers)	1.60	1.70
10-16 (bunkers)	1.00	1.05

GULF COAST—

28-30 gas oil	.04½	.04⅝
28-30 diesel (bunkers)		1.90
Bunkers (bulk cargoes)		.85
Bunker C (bunkers)		1.05

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.05
28-30 diesel (lighterage 6¼c per bbl.)		2.10
28-30 diesel (tankcars)		.05
Bunker C (to ocean-going ships in N. Y. harbor)		1.25
Industrial fuel (tankcars)	.04½	.04¾

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:	
190-200 D, 15-25	.19
150-160 D, 0-10	.16
150-160 D, 15-25	.15
150-160 E, 15-25	.14½
100-110 D, 0-10	.14½
Steam refined:	
631 green (treated)	.13½
600 dark green (untreated)	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):

10 pour test	.18	.19
15 pour test	.17	.18
20 pour test	.16	.17
25 pour test	.15	.16
Steam refined:		
600	.07	.08
650	.10½	.11½
600 Pennsylvania flash	.11	.12
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:	
150-3	.09
180-3	.10
180-4	.09½
200-3	.10½
200-4	.10
250-3	.11½
250-4	.11
280-3	.12½
280-4	.12
300-3½	.13
400-3½	.14
100-2½ paraffin oil	.06
15-20 Cold Test:	
200-3	.10
200-4	.09½
250-3	.11
250-4	.10½
280-3	.12
280-4	.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08¼	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.17½	.18
10 pour test	.16½	.17
15 pour test	.16	.16½
25 pour test	.15	.15½
180 vis. at 70° F., 3 color:		
25 pour test	.16	.16½
200 vis. at 70° F., 3 color:		
Zero pour test	.20½	.21
10 pour test	.19½	.20
15 pour test	.19	.19½
25 pour test	.17	.17½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¾	.02⅞

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0255	.0260
124-126 (a.m.p.) w.c. scale	.0255	.0260

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0295	.0300
124-126 (a.m.p.) y.s.	.0265	.0280
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05	.05½
60-62 400	.05⅝	.05½
61-63 390		.05⅝
64-66 375		.05¾

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¾	.06
65-69 octane		.06¼
Above 69 octane		.06½

KEROSENE

GULF COAST—

41-43 prime white		.05⅛
41-43 water white		.05¼
44 water white		.05⅜

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.21½	.22
600 S.R. unfiltered	.16½	.17
630 S.R. unfiltered	.21	.21½
600 flash, S.R.	.21½	.22
630 flash, S.R.	.25½	.26
Bright Stocks:		
8 color	.23½	.24
6½ plus color in dilution	.23	.23½

NEUTRAL OIL

200-3 color	.30	.30½
150-3 color	.25½	.26

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude Scale:		
124-126 w.s.	.0295	.0300
124-126 y.s.	.0265	.0280

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	.91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Jan. 1, 1937)*	.67
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.70
Hogback, New Mex. (Jan. 1, 1937)*	1.21
Pondera, Mont. (Jan. 26, 1936)*	1.05
Salt Creek Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1 20¼
Lea County, N. M. (see West Texas gravity table)	
Artesia, N. Mex. (Jan. 28, 1937)‡	.90
Maljamar, N. Mex. (Jan. 28, 1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.	.97
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Cut Bank, Mont. (Oct. 25, 1937), (posted by Northwest Refining Co.)	1.10
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Southwest Texas

(January 28, 1937)

Pettus	1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Luling	1.00
Lytton Springs	1.12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich (Dec. 29, 1937)†	.80
Buckeye (Jan. 8, 1938)	1.00½
Arenac, Mich (Dec. 29, 1937)†	.80
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.
†McClanahan P. L. & Simrall Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective December 1, 1937)

Bradford, Pa.	$2.20
Allegany, N. Y.	2.20

SOUTH PENN OIL CO.
(Effective December 1, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.20
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.88
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.82
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.70
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective December 1, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A — Includes Cochran, Franklin, Hamilton and Doolittle districts.	2.15
Group B — Includes Tidioute district.	2.14
Group C — Includes Turkey and Tidioute districts.	2.13
Group D — Includes Bear Creek and Porkey districts.	2.12
Group E — Includes Eideneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	2.10

PURE OIL CO.
(Effective December 1, 1937)

Cabin Creek, W. Va.	1.82
Bradford Hollow, W. Va.	1.82
Kelly Creek, W. Va.	1.82

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.16
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Mexico

Heavy Mexican crude	$.95

*In U. S. currency, f.o.b. ship, based on December spot market transactions.

Rocky Mountain Runs

Production estimates for week ended January 22, 1938:

	Bbls.
WYOMING	
Salt Creek	16,030
Big Muddy	1,310
Badger Basin	250
Black Mountain	140
Byron	1,970
Dallas Derby	570
Dutton Creek	60
Elk Basin	20
Frannie	790
Garland	2,460
Grass Creek	80
Hidden dome	210
Hudson	300
LaBarge	930
Lance Creek	12,240
Lost Soldier	1,480
Medicine Bow	4,370
Midway	40
Oregon Basin	2,170
Osage	800
Pilot Butte	20
Quealy dome	870
Rock River	2,130
South Casper	500
Poison Spider	290
Teapot	20
Warm Springs	70
Wertz	440
Waugh dome	250
Total Wyoming	50,810
MONTANA	
Border	20
Cat Creek	620
Cut Bank	7,770
Dry Creek	520
Kevin-Sunburst	3,830
Pondera	1,150
Total Montana	13,910
COLORADO	
Florence	180
Fort Collins and Wellington	280
Iles dome	2,730
Moffat	300
Orchard	30
Rangely	90
Tow Creek	180
Price	660
Total Colorado	4,450
NEW MEXICO	
Cooper	5,280
Eaves	1,010
Eunice	27,540
Hardy	1,660
Hobbs	16,380
Jal	1,280
Langlie	3,130
Lynch	650
Lynn	640
Mattix	2,600
Monument	28,840
North Lynch	60
Penrose	4,750
Rhoades	140
Skelly	1,830
South Eunice	2,510
Vacuum	380
Artesia-Maljamar	7,160
Getty	200
Hogback	200
Rattlesnake	830
Table Mesa	100
Total New Mexico	107,170
Total Rocky Mountain region	176,340

Crude Prices by Gravities

	1 Oklahoma-Kansas	2 Oklahoma-Kansas	3 North and Central Texas	4 East Central Texas (Mexia district)	5 North Louisiana-Arkansas	6 Gray County, Texas	7 Hutchinson-Carson counties, Texas	8 Rodessa, Louisiana-Texas and Panola County, Texas	9 Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	10 Gulf Coast	11 Gulf Coast	12 Lea County, N. Mex. West Texas except Pecos County	13 Mirando district, Texas	14 Marion County, Texas	15 Refugio, Greta, Saxet, Taft, Texas	16 Anahuac, Flour Bluff, Dickson, Turtle Bay	17 White Castle, Louisiana	18 Iowa, Louisiana	19 Cayuga, Texas
Bel. 18	....	....	....	....	....	....	....	....	....	$.90	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.92	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.94	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.96	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel. 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tidewater Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

Ontario Drilling

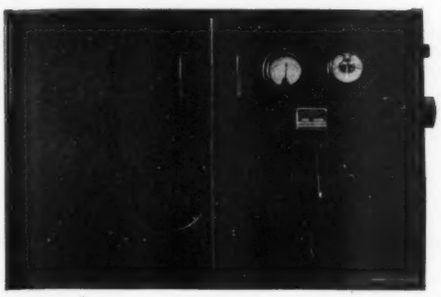
In the De Clute field, Kent County, Gas Producers Syndicate No. 4 Pardo farm, Raleigh Township, bottoming at 1,522 feet, with around 2,500,000 feet a day initial flow, was deepened 50 feet without increasing production. It will be drilled deeper.

NEW OR IMPROVED EQUIPMENT

Automatic Detector and Alarm Reveal Presence of Gases

The R & B continuous automatic gas-detector and alarm, manufactured by B. O. Bushnell, 541 North Kings Road, Los Angeles, Calif., consists of three electrically operated units: (1) Gas-detector and alarm, (2) remote control and instrument panel, (3) multipoint gas-gathering system. Each unit can be furnished vapor- and explosion-proof when required.

The gas-detector is 30 inches long, 20 inches



high and 14 inches deep. The remote-control panel is approximately 12 by 16 inches. The gathering system is 3 by 4 feet and 2½ feet high. The combined units cover a floor space 4 by 6 feet.

The purpose of the system is to give an alarm by means of lights and howlers when a gas is present at one or more points in a plant, as, for example, hydrogen sulfide leaking in an oil refinery where cracking, polymerization, or treating processes are employed. Similarly, the system might be used in tank farms.

The principal of operation is based on chemical reactions and the photo-eye. Accurate adjustments can be made at the instrument panel to suit operating conditions. An indicating meter continuously shows the exact reaction of the detector to the gas.

When detecting hydrogen sulfide the alarm will sound on as weak a mixture as .0015 of 1 per cent. Manual resetting is required after each alarm. The detector can be arranged to keep a time record of all reactions.

All units are self-cleaning (clear themselves between samples) and give an alarm in the event of any mechanical or electrical failure. Operating mechanisms are of stainless steels, bakelite, or heavily plated brass. Exterior finish is black cracked enamel.

The gathering system provides the detector with a new gas sample every two minutes. It is regularly equipped with flexible connections for lines reaching into as many as 15 different zones. The system is intended for use with hydrogen sulfide, ammonia, acid, and other gases; also dust.

Here and There With Men Who Manufacture Equipment

General Electric Co. has opened its new $700,000 building at 212 North Vignes Street, Los Angeles, Calif. It contains the district sales and other offices.

Edgar M. Queeny, president of Monsanto Chemical Co., announced that the directors of both companies had approved contracts for the acquisition of all assets of Fiberloid Corp., Springfield, Mass., by Monsanto in exchange for capital stock of Monsanto on the basis of 7 shares of Monsanto for 12 shares of Fiberloid.

Following the resignation of Ernest Wooler, chief engineer of Timken Roller Bearing Co., Canton, Ohio, A. L. Bergstrom has been appointed executive engineer to coordinate engineering activities. A graduate of the Royal Technical Institute of Sweden, Mr. Bergstrom spent several years with the Krupp organization in Germany.

R. A. McCarty has been appointed manager of the small motor division of Westinghouse Electric & Manufacturing Co. He succeeds R. F. Frenger, and his headquarters will be in Lima, Ohio. Mr. McCarty already had served as division engineer, manager of the power engineering department, and manager of the generator division.

Struthers-Wells, Warren, Pa., has made Gordon M. Jackson New York district manager of the heat-exchanger division. Mr. Jackson was founder and head of the Jackson Engineering Corp. of Tulsa, serving the gasoline recovery field. His headquarters will be the company office in the R.C.A. Building, New York.

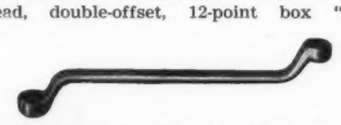
J. L. Dittman, manager of oil country sales for the Wall Rope Co., is visiting the home office at 48 South Street, New York, following which he will contact G. C. Terry, in charge of sales in the eastern territory, and make a round of the eastern fields.

Marmon-Herrington Moves

Without interruption of operations, the Marmon-Herrington Co., Inc., Indianapolis, Ind., manufacturer of all-wheel-drive motor vehicles, has completed moving into its new plant in West Washington Street at Harding. The new Marmon-Herrington property is at the junction of the Big Four and Belt railroads on U. S. Route 40. It includes two large brick and structural-steel factory buildings and a modern two-story, fireproof office building. The firm's assembly line occupies one of the factory structures and its machine shops and experimental laboratories the other.

Williams Adds Heavier Models to Line of "Superrenches"

J. H. Williams & Co., 75 Spring Street, New York, announces the addition of three new double-head, double-offset, 12-point box "super-



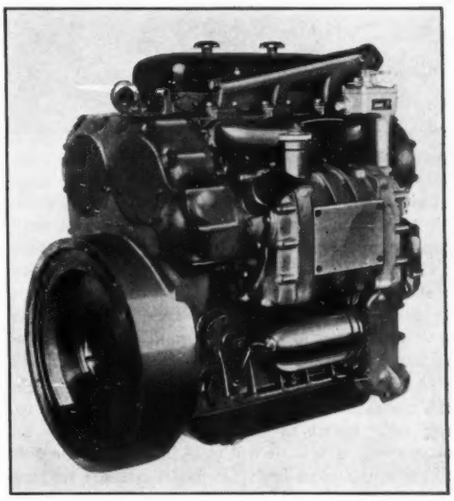
renches" to the company's line. These wrenches, designed for heavy service, range in length from 23 to 27 inches with openings from 1 7/8 to 2 3/8 inches. They are unusually strong and are designed to permit work in close quarters. Their extra length provides great leverage.

Wrenches of this type are in demand for certain classes of work due to the fact that they will completely rotate a hex nut where the swing of the wrench is limited to 30 degrees, less than one-tenth of a full turn.

These new "Superrenches" are forged from chrome-molybdenum steel, heat-treated and finished in chrome plate.

General Motors Enters Small Light Diesel Engine Field

General Motors Corp., Detroit, Mich., has begun manufacture of a complete line of lightweight, two-cycle diesel engines. The company has been making two-cycle diesels for railroad and marine



service, ranging from 600 to 1,200 horsepower. New products now extend this line in varying sizes down to a one-cylinder 22-horsepower model.

The product program includes three series of models, based on three different cylinder sizes. The smaller engines have 71 cubic inches per cylinder and the intermediate sizes have 223 cubic inches per cylinder. The larger sizes have 503 cubic inches per cylinder.

The model 71 series will include 1-, 3-, 4- and 6-cylinder models rated at 22 to 160 horsepower maximum at 1,800 r.p.m. The model 223 series will include 4-, 6- and 8-cylinder models rated for industrial and marine purposes at 200 to 400 horsepower.

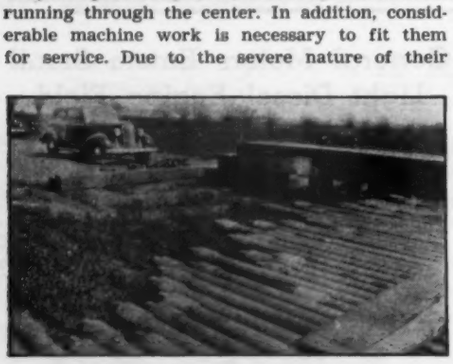
The engines are distinguished, according to the manufacturers, by their lightweight, compactness, low operating cost and freedom from necessity of special lubricants and fuels. The lightweight, smaller size, and compact shape of the engines are accomplished chiefly through use of the two-cycle principle, which permits smaller cylinders, and by application of the technique of engine-building acquired in General Motors extensive automotive experience. Rotating masses and reciprocating forces are balanced by a unique and efficient independent balancing mechanism, which cancels vibration. The crankshaft can be rotated in either direction. Blower, water-pump, oil-cooler, governor and fuel-pump can be mounted on either side of the engine, regardless of the crankshaft rotation. Exhaust-gas and cooling-water manifolds also may be grouped on either side, irrespective of other accessories. This permits installing the engine in close quarters where only one side is accessible for servicing.

BJ Oil-Tool Division in Tulsa

Byron Jackson Co., oil-tool division, has announced the opening of a sales office in the Midco Building, Tulsa. O. W. Morgan, Jr., who has been with the company several years, has been transferred from Illinois to take charge.

Cost of Drillpipe Maintenance Is Reduced by Hard Facing

Maintenance of oil-well drillpipes has always been a source of great expense to drilling operators. The pipes themselves are expensive. They are practically solid, with only a small hole running through the center. In addition, considerable machine work is necessary to fit them for service. Due to the severe nature of their



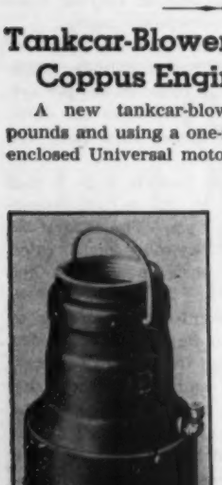
service (they are constantly in motion inside the well), the drillpipes soon wear out and must either be scrapped or reconditioned for service.

A new method of maintaining oil-well drillpipes now being used by operators utilizes hard facing by electric welding. By building up the reenforcement of the pipe (see large end of pipe in illustration) the operators are able to use a set of tools over and over again. Sometimes the surfaces are built up to a thickness of 1½ inches.

Instead of having to replace a worn-out pipe, the operator simply applies new abrasion-resisting weld metal to the worn surfaces. This requires only a few hours' time. Experience is said to show the hard facing deposit will last as long as the tool. "Hardweld" electrodes manufactured by Lincoln Electric Co., Cleveland, Ohio, are used.

Tankcar-Blower Developed by Coppus Engineering Corp.

A new tankcar-blower, weighing about 55 pounds and using a one-fourth horsepower totally enclosed Universal motor, has been developed by the Coppus Engineering Corp., of Worcester, Mass., manufacturer of ship hold ventilators, cable and boiler manhole ventilators, etc. The new blower is provided with a coupling for attachment to the nipple at the bottom of the tankcar.



The unit will deliver approximately 600 cubic feet of air per minute, which is said to be sufficient to ventilate a tankcar thoroughly. It is solving the problem of supplying fresh air to men working within the car, giving them better working conditions and cool air, free from harmful gases or fumes. The illustration shows the blower for attachment to the nipple of the car.

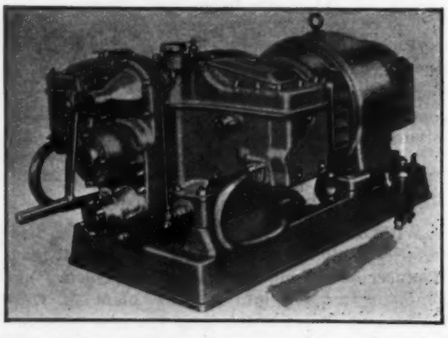
Heat in Truck Tires Reduced

A new type of cotton tire cord, designed primarily to reduce heat generated at high speeds in truck and bus tires is announced by the B. F. Goodrich Co., Akron, Ohio. High-speed trucking under heavy loads increases tire temperatures tremendously, frequently causing premature failure. In the effort to remedy this condition truck tires have been increased in size and weight, which is said to have increased the internal heat problem. The new tire cord gives unusual strength, without bulk, and materially reduces operating temperatures of tires, the makers say. The cord is being manufactured at Martha Mills, Goodrich textile plant in Silvertown, Ga.

Covic Diesel Now Available for Oil and Industrial Fields

Covic diesel engines now are available for the oil, automotive and general industrial fields, according to announcement of James Garvey, president of the Covic Diesel Pacific Co., Glendale, Calif. The Covic is a four-cycle, two-cylinder opposed, full diesel engine of the cold-starting, solid-injection type. Its speed range is from 500 to 3,500 r.p.m., and it is rated at 15-18 horsepower, for normal operations at 1,875 to 2,600 r.p.m. Width is 30 inches, height 19½ inches, length 19 inches. Weight of the basic engine is 280 pounds, including a 60-pound steel flywheel. The engine is a development of the Victor Oil Engines (Coventry) Ltd., England. It is now built under license from Victor Oil Engines, Ltd., in England, France, Switzerland and Holland, and at an early date a leading American motor manufacturer will be in full production on them. In the meantime the Covic Diesel Pacific Co. will supply distributors with the English-built engine equipped with American-built accessory equipment such as generators, clutches, pumps, compressors, etc.

The Covic Diesel Pacific Co. plant in Glendale includes general offices, showrooms, service



departments and complete assembly and testing sections. The bare engines will be assembled for various duties at this plant, and both parts and complete units will be warehoused at San Francisco, Seattle, Salt Lake City, Denver, and Fort Worth, for deliveries through the distributor organization. In charge of the plant's service is Harvey Miller, for years active in motor manufacturing in Detroit. The chief engineer is Richard Watson, who did much of the early work in high-speed diesel development in this country.

Crane's Oilproof Flax Packing Protects Against Failures

Of interest in the refinery and pipe line maintenance fields is the new oilproof flax packing

announced by the Crane Packing Co., 1800 Cuyler Avenue, Chicago. This packing, style 700-C, is manufactured from long continuous flax yarn processed by a special treatment, whereby each fiber is metallized, graphited and then impregnated with Crane-prene, a special oil- and gasoline-proof binder compound.

The final step in the manufacture of this packing is braiding and interlocking the processed chains of flax fibers into finished commercial sizes commonly used in pipe-line pumps and valve-stems.

This new packing contains a permanent lubricant, adapting it for refinery services involving petroleum or petroleum distillates in pipe-line pumps and valve-stems. The lubricant will not melt out or become dissolved, leaving the flax dry and generally unfit for further use. It is asserted this new packing gives extra-long life and has dependability adding protection against packing failures. Style 700-C is available in sizes from one-quarter inch to 2 inches.

Decker in K. M. A. Field

Decker Tool & Supply Co., with general offices at Electra, Tex., has opened a branch store at Kadane Corner in the new K.M.A. field. F. M. Wilson is being transferred from East Texas to take charge.

Four "Caterpillar" diesel D13000 engines driving Gardner-Denver line pumps at the Satsuma, Tex., station of the Humble Pipe Line Co.

Monel-Clad Polished Rods Are Placed on Market by Jones

S. M. Jones Co., Tulsa, announces Jones monel-clad polished rods, which are said to offer distinct advantage for corrosive service. The cut-away illustration shows how the rod is made of a steel core with a heavy monel sleeve approximately .040 inch thick. This sleeve is put on the steel core in a manner which avoids any possibility of slipping and effects an integral bond of the two materials.

The steel core allows a tensile strength comparable to any ordinary steel rod and the monel case gives it the corrosion-resistance inherent in

this alloy. This combination thus is said to have the advantages of high strength and outstanding resistance at less cost.

The Jones field engineering department, in cooperation with producers, is reported to have carried on tests of this rod in various corrosive wells for over 280 days without failure. Physical properties, service record information and other technical data are obtainable from the field engineering department.

Bulletins, Booklets and Other Literature for the Trade

Two pieces of literature are offered by Mixing Equipment Co., Inc., 1034 Garson Avenue, Rochester, N. Y., both describing advantages of "Lightnin" mixers for the laboratory or for handling gasoline, petroleum, slurries, water-softeners, brines, asphalt, chemicals, oils, acids, etc.

Foxboro recording thermometers are the subject of a 40-page illustrated booklet obtainable from the Foxboro Co., Foxboro, Mass.

Users of hose will be interested in a 4-page illustrated folder issued by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J. The folder shows installations of Manhattan and Condor hose in a wide range of industries, with helpful technical data.

An informative article on cast steel in the valve and fitting industry is in the latest issue of Walworth Today, published by Walworth Co., Inc., 60 East Forty-second Street, New York.

"Oil Derricks Amidst the Wheat" is one of the interesting illustrated articles in the current number of International Power, published by International Harvester Organization, Chicago.

A catalog of roller-bearing Universal joints and flexible drive-shafts for industrial applications is offered by Mechanics Universal Joint Division, Borg-Warner Corp., Rockford, Ill.

The complete line of Shafer roller bearings is described and illustrated in an attractive 74-page booklet prepared by Shafer Bearing Corp., 35 East Wacker Drive, Chicago. Useful engineering information is included.

Boston Gear Works, Inc., 955 West Washington Boulevard, Chicago, is sending on request a pocket-size catalog of 320 pages covering power-transmission equipment.

Duplex air- and gas-compressors are the subject of a 24-page bulletin which Pennsylvania Pump & Compressor Co., Easton, Pa., has ready for distribution.

D. W. Haering & Co., Inc., 3408 Monroe Street, Chicago, announce the second edition of "Organic Methods of Scale and Corrosion Control," available for applicants who give their business address or connection.

A 28-page Pyrometer catalog, No. 1101D, has just been published by C. J. Tagliabue Manufacturing Co., Park and Nostrand Avenues, Brooklyn, N. Y.

A revised, two-color, 8-page bulletin on Adsco-Bannon tile conduit and Adsco-Corning filler insulation for underground steam or hot-water lines, is available by addressing American District Steam Co., North Tonawanda, N. Y.

Graver Facilities Expanded

Graver Tank & Manufacturing Co., Inc., entering its seventy-fourth year, has enlarged its manufacturing facilities by addition of several modern buildings, with latest equipment, at its plant in Catasauqua, Pa. The Graver line, widened in recent years, includes oil tanks for every purpose, including field equipment, refinery installations, service stations and accessories, standard-size tanks or tanks built to any specifications; also general steel plate construction work. The company's water-treating equipment includes water-filters for mineral, taste, color and odor removal, chlorinators, lime and soda softeners, zeolite softeners, iron removal plants and sterilizers.

Strength of Chains for Billings Pipe-Wrenches Is Increased

The Billings & Spencer Co., Hartford, Conn., announces an improvement in the chains used on its chain pipe-wrenches. Engineers and metallur-

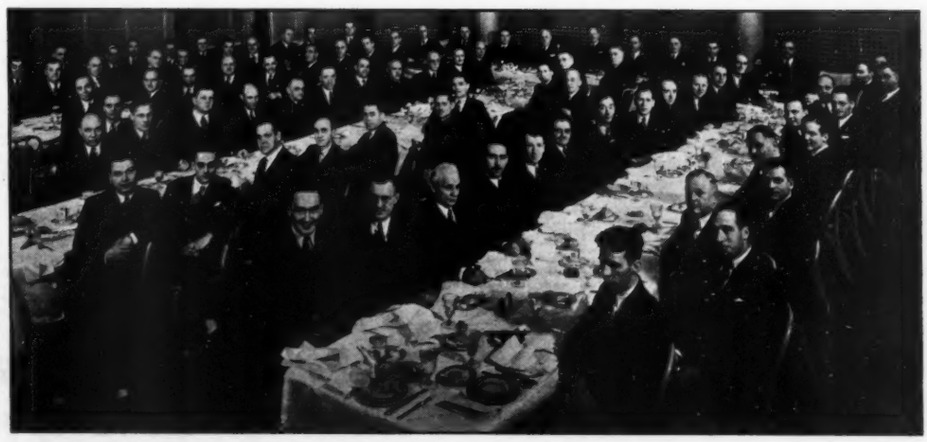
gists are said to have increased the breaking strain pounds of the chains 40 per cent. This is attributed to the controlled grain size steel, to the company's own specifications, scientifically heat-treated to develop the necessary physical properties in the steel.

Announcement of this stronger chain is expected to be of interest to oil-field workers and others to whom the strength of chain pipe-wrenches is vitally important. Each Billings chain has a rustproof finish. All are equipped with the Billings master link for other makes of wrenches. Billings chains for pipe wrenches are individually boxed in a strong carton.

Atlas Completes 25 Years

The twenty-fifth anniversary of Atlas Powder Co., Wilmington, Del., is memoralized in an attractive booklet of 64 pages. Of the 2,500 employes now on the payroll 137 have been with the company continuously throughout its quarter-century of life, and their pictures are given. Scenes from the factory and illustrations showing work done by Atlas explosives add interest. Many readers will be astonished to discover that some Atlas products are far removed from explosives: Zapon finishes for textiles, wood, metal, paper, etc.; a decolorizing and purifying agent for salad oils and cooking fats; Hydrodarco, to remove offensive tastes and odors from municipal and industrial waters—and a long list of others.

PITTSBURGH EQUITABLE MEN GUESTS OF ROCKWELL



Some 80 officers and department heads of Pittsbugh Equitable Meter Co. and Merco Nordstrom Valve Co. were guests at a dinner given recently at the Pittsburgh Athletic Association, Pittsburgh, Pa., by Col. W. F. Rockwell, president. After Colonel Rockwell had reviewed the progress of the two companies during the past year and touched on prospects for the future, short talks were given by F. B. Wolfe, vice president; E. M. Meyers, treasurer; Capt. A. E. Higgins, vice president; Walter Parker, factory manager; Carl Dixon, shop superintendent; Allen D. MacLean, chief engineer, and W. H. Newbaker, purchasing agent, others seated at the speakers' table.

Oil Man's Calendar

January

28—Pittsburgh, Pa. Annual dinner, Pittsburgh Traffic Club, William Penn Hotel.

February

3-4—Lubbock, Tex. Third Welding Conference, Texas Technological College.

7-9—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel

14-15—Wichita, Kans. Kansas Oil Men's Association, twenty-fourth annual convention, Hotel Broadview.

14-18—New York, American Institute of Mining and Metallurgical Engineers, annual meeting, Engineering Societies Building.

15—Kilgore, Tex., East Texas Chapter A.P.I., at High School Auditorium.

16-17—Peoria, Ill., Illinois Petroleum Marketers Association, annual convention, Pere Marquette Hotel.

17-18—Amarillo, Tex. American Petroleum Institute, Division of Production, spring meeting, Herring Hotel.

22-24—Milwaukee, Wis., Wisconsin Petroleum Association, Schroeder Hotel.

22-24—Columbus, Ohio, Ohio Petroleum Marketers Association, fifteenth annual convention and marketing exposition, Deshler-Wallick Hotel.

March

2-3—Indianapolis, Ind., Indiana Independent Petroleum Association, spring meeting.

2-4—Des Moines, Iowa, Iowa Independent Oil Jobbers Association and Trade Exhibit, Fort Des Moines Hotel.

7—Rochester, N. Y., American Society for Testing Materials, Spring Regional Meeting and Group Committee Meetings.

16-18—New Orleans, twenty-third annual meeting, American Association of Petroleum Geologists, Roosevelt Hotel.

21-22—St. Louis, Mo., Liquefied Petroleum Gas Association, annual meeting.

23-25—Los Angeles, Calif. American Society of Mechanical Engineers.

24-25—Fort Worth, Tex. American Petroleum Institute, Division of Production, spring meeting, southwestern district, Blackstone Hotel.

April

4-6—Cincinnati, Ohio, A.G.A. Distribution Conference, Netherland Plaza.

13-15—Cleveland, Ohio, National Petroleum Association.

13-15—Houston, Tex., Petroleum Industry Electrical Association.

17-21—Dallas, Tex., American Chemical Society.

19—Los Angeles, Spring meeting, Pacific Coast district, A.P.I. Division of Production, Biltmore Hotel.

20-22—Buffalo, N. Y., American Institute Mining and Metallurgical Engineers, Open Hearth Conference.

25-27—Hot Springs, Ark., Western Petroleum Refiners Association annual meeting.

28-29—Pittsburgh, Pa. Spring meeting, Eastern District, A.P.I. Division of Production, William Penn Hotel.

May

11-13—Tulsa. Natural Gasoline Association, Hotel Tulsa.

12-14—Tulsa. National Oil Scouts Association of America.

14-21—Tulsa. International Petroleum Exposition.

23-25—Wichita, Kans. American Petroleum Institute, eighth midyear meeting.

(?)—New Orleans, La. American Gas Association, Natural Gas Department.

June

6—Houston, Tex. Oil Workers International Union.

16-18—Pittsburgh, Pa. Pennsylvania Grade Crude Oil Association.

20-24—St. Louis, Mo. American Society of Mechanical Engineers.

September

14-16—Santa Barbara, Calif., annual meeting Pacific Coast Gas Association, Biltmore Hotel.

October

——Tulsa, I.P.A.A., annual convention.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER

Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS

All cases submitted given personal attention by members of the firm.
Form "Evidence of Conception" and instructions
"How to Establish Your Rights"—Free
LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg. Washington, D. C.

Business Opportunities

DIRECTLY alcoholized, oxygenated, petroleum oils, higher alcohols, motor oils. Samples produced for reasonable fees. Free circular on "New Treatment of saturated hydrocarbons." Dr. Pelc, 2519 So. Crawford Ave., Chicago, Ill.

CAPITAL negotiated to drill test wells. Write Mr. Barrick, New Martinsville, W. Va.

FOR SALE—8 valuable mining claims in Arizona. Ore carries 5 metals, Gold 12 oz., Silver 800 oz. per ton. Copper, lead and zinc about 20% each. A million or more tons of this ore is open mining, awaiting the drill and shovel. Address A. W. Lawrence, 1107 Karl Ave., Duquesne, Pennsylvania.

PIPE LINE CONSTRUCTION

Ditch machines for rent by foot or day. Ditching and welding contracted. At your service with an efficient, experienced construction organization.

SHAMROCK PIPE LINE CONSTRUCTION CO.
Box 47 Mt. Pleasant, Mich.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Wanted

WANTED — Ownership map, (1937), good condition, northern Grady County and south Jefferson County, Okla. Wilson, 619 Cherry, Chattanooga, Tennessee.

Crude Oil Production

RODESSA CRUDE oil for sale from my own and other Miller County, Arkansas, wells. Shipments to be made via KCS Ry. from Layton, La. or Ark., to Lake Charles or New Orleans, La., Beaumont or Port Arthur, Texas. See William Monroe Layton, Rodessa, Louisiana.

Financing

CAPITAL SEEKERS—Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

INQUIRIES solicited from corporations interested in raising capital through marketing of corporate securities.
THE BROOKWORTH CO., Inc.,
110 East 42nd St., New York City.

JOHN MORRIS, Box 5411, Philadelphia, writer of some of America's greatest financial campaigns will shape your deal FREE. Prospectus expertly written and list supplied for $25. and low commission. Handle your own mailing. Established 1913.

Real Estate

FOR RENT OR SALE—50 by 140 ft. brick building, show room, front and rear truck entrance, wholesale, retail district. Rent reasonable. A. Faustgen, Wooten Hotel, Abilene, Tex.

Geophysical Instruments

MAGNETOMETER FOR SALE. Excellent condition. ASKANIA-WERKE. Used very little. Complete with auxiliary magnets. Address Box J-224, The Oil and Gas Journal, Tulsa, Oklahoma.

For Sale—Maps

1938 REVISED EDITION

MAP of State of Texas, Eastern N. M., parts of Southern Okla., SW Ark. and La., shows Oil and Gas Fields in color, Counties, County Seats, elevations, coordinated alphabetical index of counties and fields.
Price $1.00 postpaid

Write for descriptive folder of Oilfield and County Ownership Maps.

ZINGERY OIL MAP COMPANY
Fair Building Fort Worth

Royalties

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

Oil Royalties and Oil and Gas Leases
Bought and Sold
E. T. Marion
1109 Petroleum Building
Midland, Texas.

ROYALTY DEPOSITOR CORPORATION, 70 Pine Street, New York City, are buyers of landowner's producing royalties for a large royalty Investment Trust. Offerings of good properties are invited.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

B. D. BUCKLEY

Paul Brown Bldg., St. Louis, Mo.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
214 Kennedy Bldg., Tulsa, Okla.

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Producing and Non-Producing
OIL ROYALTIES
Registered Dealers Only
GRIMES ROYALTY CO.
Hunt Bldg. Tulsa, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma